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MEMOIRS OF MILITARY SURGERY.

Observations in the Military Hospital at Buffalo, on the Niagara Frontier, in the campaign of 1814. By W. E. Horner, M. D., late Hospital Surgeon's Mate, Demonstrator of Anatomy in the University of Pennsylvania.

THE following observations were made at a time when the contest between the United States and Great Britain seemed interminable. As the author was then in the service, they were intended for the regulation of his conduct in subsequent campaigns: happily, the restoration of peace in the early part of 1815, rendered them useless in that point of view, and the manuscript containing them, was laid aside, and nearly forgotten, till within a few days, when, on revising it, it appeared to contain some facts which might be in a degree useful.

The brilliancy of the campaign in 1814, on the Niagara frontier, attracted the eyes of every one to its events; we have had many interesting accounts of its military proceedings, published in the gazettes, and in books, but no notice

VOL. II.—S s

whatever, as far as I know, except in a few isolated cases, has been taken of the occurrences in its hospitals. The following condensed view of them has but very humble pretensions; it was made under circumstances of military duty and situation, every way unfavourable to a systematic and detailed account of surgical proceedings; but having for its object what has just been stated, the author considers any further commentary as useless.

Observation 1st. Gun-shot wounds which did no injury to the bones, or to the great cavities, generally did well; a slight inflammation and stiffness following, which went off in a few days. Our most common dressing, in these cases, was basilicon, simple cerate or tallow; poultices or discutients were seldom indicated. The wound was cleaned by the efforts of nature, in eight, ten, or twelve days, being succeeded by a copious discharge of pus, which gradually diminishing, the wound healed.

Obs. 2d. When the large cylindrical bones were broken, our resort was, for the most part, amputation: we had but few cases, the result of which encouraged us to attempt the saving of others. Out of many cases of fractured ossa humeri and ossa femoris which I saw, a majority of the patients died, or were compelled to submit to amputation; there being but few cases of perfect recovery from such accidents. The latter circumstance was partly attributable to the largeness of the English musket balls, which most always produce an extensively comminuted fracture when they strike a hard bone. Amongst the instances of recovery where the thigh bone was broken, is that of lieutenant-colonel M'Neil, of the 11th infantry, of lieutenant Cely, of the same regiment, and a few privates of other corps. In the instances of recovery which came under my observation, the bone was broken somewhere in its lower half; this fact corresponds with the testimony of those surgeons who have had the greatest experience in gun-shot wounds.*

* See Thomson's Reports of Military Observations in Belgium.

A short time after a gun-shot fracture, the limb becomes highly inflamed, and swells to twice its natural size : sinuses, which open into the wound, are the invariable consequences of this inflammation : after they have existed for a time, the patient's health is destroyed, he becomes afflicted with diarrhœa and hectic fever, which frequently carry him off.

Obs. 3d. During the heat of the summer our amputations were very unsuccessful, so much so as almost to discourage us from performing them. Many of the recent stumps mortified ; in others that did not, the patients gradually sunk into the arms of death. In the latter, I observed that there was great retraction of the muscles, and frequently the periosteum separated from the bone, for a considerable distance up.

Traumatick gangrene, of the extremities, was very common at this period ; a variety of tonic, and other means, were adopted to arrest its progress, and amongst the latter, amputation :* nothing succeeded.

Obs. 4th. Wounds attended with much discharge, were frequently infested with maggots, the ova of which were deposited by flies, in the bed clothes and dressings. This accident will probably be attributed to negligence ; but the most diligent attention from nurses, could not prevent it. It was a most serious evil, and frequently involved the life of the patient, from the irritation produced.† It was curious to see how deeply these animalculæ would work their way into wounds, producing, in some instances, as complete a dissection of the muscles, as could have been performed by the knife.

Obs. 5th. I saw a few cases of wounds, through the large joints, which healed by anchylosis. Mr. J. Bell considers them mortal. They are more painful than any other wounds, the patient suffering excruciating torture for several weeks. We most frequently had to amputate, or lose the patient, in consequence of sinuses and hectic fever. Sometimes a low

* See Larrey, (*Memoirs of Military Surgery*) who recommends this practice.

† An analogous fact is quoted from Alanson, by J. Bell.

delirium took place, particularly in gun-shot wounds of the knee joint, in which the patient died in a few days after the injury. Wounds through the ankle joint were not attended with so much danger.

Obs. 6th. Wounds of the brain did not always prove immediately fatal. John Price, a private of the 1st regiment of infantry, was wounded at Bridgewater, on the 25th of July, 1814; the ball penetrated, transversely, the forehead, passed through the brain above the ventricles, and fractured the opposite part of the cranium; he died on the 2d of September following, five weeks afterwards. Several other instances occurred, in which the substance of the brain was wounded by balls, and by tomahawks, in which the patients continued to live for several days; but I saw no instances of recovery from this accident.

Obs. 7th. Several persons recovered who were shot through the throat, in such a manner as to endanger the carotid arteries, and the important nerves. Amongst them were brigadier now major-general Ripley,* and lieutenant M'Intosh† of the rifle corps. Both these officers lost the use of their upper extremities for a long time, and suffered exquisite pain in them. The latter discharged the ball, per anum, several months after he had been wounded.

Obs. 8th. Several recoveries, from wounds through the thorax, took place. Amongst them were lieutenant-colonel Trimble, and an ensign of the 19th infantry. Bleeding to a very great extent, was used in all these cases.

Obs. 9th. Wounds of the abdomen, and its contents, were in several instances, recovered from; amongst them were lieutenant Cisna, of the 19th infantry, and a serjeant White: in the first, the ball entered in the anterior part of his belly,

* The case of general Ripley was detailed, at large, in the New York Medico-Chirurgical Journal, by his attending surgeon, Dr. Allen.

† This case has been reported in the Eclectic Repertory, by my much esteemed friend Dr. Henning, of Richmond, who belonged, at the time, to the riflemen. Lieutenant M'Intosh was, at different times, under the care of us both.

below the navel, and came out near the spine : about six weeks afterwards, a button was discharged from the wound, near the spine, which had been carried in along with the ball. Serjeant White's belly was penetrated by a ball, which also took in some fragments off the breech of his musket. The fragments were afterwards discharged at the orifice of the wound, during a free suppuration of it.

Obs. 10th. I saw a case terminate happily, where the ball had entered above the symphysis pubis, and come out posteriorly ; the fundus of the bladder was penetrated ; for several weeks there was a constant dripping of urine from the anterior wound ; it, at length, ceased to flow in this direction, and came in the natural way.

Obs. 11th. I met with four cases of wounds of the spine. They all had pretty much the same symptoms, and termination ; being attended with loss of sensibility and motion, in all the parts below the injury, and death. For the first few days the patients were unconscious of their danger, the strength and activity of the upper extremities, and parts of the body, and the quickness of intellectual operations, being very encouraging. It was necessary to introduce the catheter twice a day, or more often, in these cases, and to expel the contents of the bladder, by pressing above the symphysis pubis. Purgatives were also necessary. In all these cases mortification took place on the sacrum, in consequence of pressure. A great irritability of the stomach occurred in each, a few days before death.

Obs. 12th. In our amputations, some very important rules, which are strongly inculcated by professor Physick, were adopted, with the most obvious advantage. One is, always to separate the lips of the flap by a piece of muslin, or linen, in order to prevent their adhesion to each other ; so that, if union by the first intention, between the flap and the stump, does not take place, a free discharge may be given to the pus, which prevents the formation of an abscess in the cavity. Another rule is, always in amputations of the leg, to get the flap from the integuments, on its posterior part. If, instead of this, a

circular flap is made, the part of it covering the sharp edge of the tibia, is most generally ulcerated through, and the ulcer remains exceedingly painful and absolutely incurable, till the absorbents round off the tibia.

I saw an attempt, to make a flap of the gastrocnemius and solæus muscles, on the principle recommended by Mr. Hey, and others ; it succeeded badly, the flap became very much inflamed, and swollen, left entirely the surface of the stump, and could not be brought back ; it gave the limb the appearance of a club. After a variety of means was fruitlessly tried to bring about cicatrization, a second amputation became necessary, in order to save the patient's life.

Two amputations, of the inferior extremity, were performed by an inexperienced surgeon, in which no flap was left ; the patients recovered, however, after a very long confinement. The stumps became conical from the retraction of the muscles, and a second sawing of the bones was requisite to the cure.

One or two amputations took place at improper periods, and, by their fatal results, shewed the necessity of attending well to the rule, that such operations are never to be performed in gun-shot wounds, except in a few hours after their reception, or after several weeks have elapsed, and the symptoms of inflammation are entirely gone.

I did not see a case of recovery where amputation had been performed on both legs, or on both thighs, in one subject, but I saw a few where a leg and an arm, or two arms, had been carried away. Several double accidents, of this kind, happened during the siege of Fort Erie. In one instance, a cannon ball entered an hospital, and ranged along the feet of a row of bed-steads, carrying away several legs in its course. In another instance, a young rifleman, of eighteen, belonging to captain Irvine's company, had both arms taken off, above the elbow joint, by a cannon shot : his gallantry and coolness, on this occasion, gave rise to a very interesting anecdote, and procured him the notice of several distinguished men.

I saw one case of recovery from amputation, at the shoulder joint : this operation was performed by Dr. Gales, of the

23d infantry, whose services and intrepidity will long be remembered by those whose lives are due to his skill.

Obs. 13th. Some cures, from extensively lacerated wounds, took place; amongst them J. Ring, private in captain now major Biddle's company of artillery: he had the whole posterior part of his thigh, from the buttock to the ham, torn up by the fragment of a shell, and the muscles laid bare, as in a dissection. This extensive wound, in which there was a great loss of integuments, cicatrized, and got nearly well in three or four months.

A private in the infantry was overhauled by some Indians, who knocked him down with a tomahawk. The blow did not stun him; he, however, had the prudence to feign death, and got off with the loss of his hairy scalp, which was removed in a circular line, just above the tips of his ears. Granulations arose from the exposed surface of bone and pericranium, in a few days, and cicatrized very kindly; the discharge of pus was, for a long time, very considerable.

Obs. 14th. In one case I succeeded in a very rapid cure of fistula, in the lower extremity, produced by fracture in the lower part of the tibia. A prodigious inflammation of the whole limb followed the injury; this was succeeded by the extensive deposition of matter, all up the leg, and extending even above the knee. When the suppuration was pretty well established, by pressing carefully the matter from the sinuses, for two or three days, so as to empty them completely, I succeeded in performing a radical cure, by compresses placed on the course of the sinuses, and secured by a tight roller applied from the foot to the groin. The fracture afterwards did very well.

Obs. 15th. I met with two cases of traumatick tetanus; the one was produced by a gun-shot wound, through the pectoralis major muscle, the other by the same kind of wound, through the sole of the foot. The first was treated with large quantities of laudanum; the patient died. The second was treated with laudanum, and according to the plan proposed

and adopted by Larrey, the surface of the wound was cauterized with a red hot iron. A temporary remission was produced in the spasm, but it returned, and the patient died the day after the application.

Such are the general observations and statements resulting from the surgical occurrences which came under my personal notice. I shall proceed next to detail a few cases which apply to them; but previous to undertaking this, I wish to mention what phenomena I saw attending a simple gun-shot wound, by which, I mean, what is called a flesh wound, and our method of treating it.

When a wound is first inflicted, say by a musket ball, because it is the most frequent cause of injury, a round hole is made, into which the surgeon can easily introduce his finger: in twelve or twenty-four hours an inflammation and tumefaction take place in the walls, or circumference of the wound, which close it up so completely, that a small probe cannot be introduced without force, and without giving pain to the patient. I mention this latter, because writers on the subject talk of introducing their bullet forceps, and extracting the ball with the same facility as they would extract a ball from a large auger hole. Indeed, I have seen a pair of bullet forceps, made by an instrument maker, for the army, who, no doubt, acted up to this idea, nearly as large and long as a pair of fire tongs, and which no reasonable man would ever think of employing on the living body.

In a vast majority of cases, no instrument larger than the common dressing forceps can be used in extracting a ball; they answer every purpose to which instruments of this kind can be applied: they are long enough, and if any objection to them can be found, on trial, it will be invariably to their bulk, which might, with great advantage, be diminished for this purpose. When I first began to dress gun-shot wounds, and extract balls, I laid hold of the common bullet forceps, and attempted to introduce them into the wound, in which I seldom succeeded, for two reasons; the first was, because

it was impossible to do so, without dilating the wound with a scalpel; and the second, because few patients will allow the excessive aggravation of pain which their unwieldy size occasion. After unavailing efforts with them, till my own patience, and that of the patient, was exhausted, I commonly finished the business with the dressing forceps. If any person will take the trouble to compare a pair of bullet forceps with the bullets used in our service, he will find that the diameter of the extremity of the forceps is nearly equal to the diameter of the ball; so that, admitting it practicable to insert the forceps into the wound, and that they may be passed along its channel till the point reaches the ball, it will be necessary to stretch the wound to twice its diameter before the blades of the forceps can be passed over the ball, and include it in their grasp; after that, the whole length of the wound is to be stretched in the same manner, in extracting the ball, and that to the very great misery of the patient. The common dressing forceps are objectionable on this account, but less so than the others, because their points are tapering and thin, and, therefore, occupy less room; and as regards firmness of grasp, it is sufficient to extract a ball out of any soft part in the human frame.

To return to the progressive condition of wounds, the tumefaction, and inflammation, of which I have before spoken, generally continue, with little variation, till the fourth or fifth day; from that time a secretion of pus takes place from the walls of the wound, which continues to increase for several days, and sometimes it becomes very profuse. This secretion of pus cleanses the wound, and terminates the inflammation and tumefaction, commonly about the tenth or twelfth day. It is at this period that it is practicable to extract the ball, and pieces of clothing, which may not have been attended to at the first dressing; the wound has now a gaping orifice, and the dressing forceps may be introduced. If it is delayed much after this time, granulations rise up and close the orifice. We can then only trust to nature for expelling those foreign bodies, and it is seldom that she does not, sooner or later,

bring them to the surface of the body. I would here mention a circumstance described by authors, which I expected to see in every case of gun-shot wounds: it is the sloughing of the wound. This is described by writers in such a manner, as to make the novitiate believe that the parts injured by the ball are separated from the living parts, and come out, in pretty much the same way, as the lining would from the sleeve of a coat. I say, I have never seen this, nor any thing like it; if a sloughing does take place, it is insensible, and so dissolved in pus, that nothing of it can be seen. Occasionally, parts of the fasciæ and of the cellular substance are detached, but there is nothing like muscular flesh. From the tenth or twelfth day, the secretion of pus gradually diminishes, granulations arise quickly, and the cicatrix commences from the circumference of the wound, contracts and advances to the centre; when it has nearly closed up, the further progress of the cicatrix is frequently checked, and remains stationary for some time, in consequence of a small button like fungus, which shoots up considerably above the surface of the wound. If this fungus is touched once or twice with caustic, it disappears, and the wound is completely healed, generally between the 20th and 30th days.

Gun-shot wounds seldom bleed much at first, or, indeed, at any part of their course. I have often had my fears excited by the accounts of secondary hemorrhage, proceeding from the sloughing involving the large trunks of arteries. It is true, this event does take place, but I think it one of comparatively rare occurrence.

The discharge from a gun-shot wound is, for several days, of the most fetid and intolerable kind, and while the deadened flesh is coming away, this discharge is of a black colour, mixed with yellow; it soils, very much, the dressings, and they cannot be washed clean without a great deal of labour.

I have here detailed the most common progress of a gun-shot wound, till the cicatrix is completed, and will now mention the dressings which we used. In simple wounds, poultices were scarcely ever indicated, the inflammatory symp-

toms subsided as the discharge of pus increased ; the applications, in common use, were the daily washing of the wounds with soap and warm water, and a plaster of basilicon, or simple cerate, or tallow spread upon patent lint. We were frequently in want of the latter, and its place was tolerably well supplied by slips of the cotton muslin, which we used for bandages. When the sores showed an indisposition to heal, they were washed with brandy or whisky.

Several interesting cases of wounds occurred in our hospital after the battle of Chippewa ; many operations were performed by the regimental surgeons on the field of battle, but a majority of them were left for the hospital staff. I shall relate a few cases, with the success attending their treatment.

CASE 1. D. C. a private in the 11th regiment of infantry, received a wound from a grape-shot, in the right breast, between the nipple and sternum ; the ball passed under the sternum, obliquely downwards, and emerged about four inches from the sternum, on the left side, beneath the edge of the pectoralis major. The first time I saw this patient was on the third day after the reception of the injury ; he said he had bled a great deal, and his clothes still showed the mark of considerable hemorrhage. I presumed that the internal mammary artery was cut or ruptured ; however, as the wound had ceased to bleed before I saw him, the condition of the artery did not excite much attention. The patient's pulse was feeble and quick, and he complained of great stiffness in his breasts ; his breathing was regular, but hurried ; I prescribed a light diet for him, and applied the common plaster to his wound on each side. I was much struck with the circumstances of this case, for the ball had passed between the sternum and mediastinum, without producing a solution of continuity in either, which, had it injured the latter, would have been known by the state of respiration. I went to visit him on the fourth day, and requested the advice and assistance of Dr. Thomas, hospital surgeon. The patient's pulse had become full, he had a slight cough, and complained of wandering pains in his

breast, superadded to those occasioned by the wound. The depleting plan was here evidently indicated. I bled him to the amount of $\frac{3}{4}$ xvi. and dressed the wound as usual; in the afternoon I bled him again, as the symptoms had not been mitigated. By bleeding four or five times more, on each day, or on alternate days, the inflammatory symptoms were thoroughly subdued, he no longer complained of his breast, except in the wounded part. His appetite returned, and his excretions were regularly performed; he was, however, from being a robust man, much reduced. About the tenth or twelfth day, the suppuration was so profuse, as to require three or four dressings in the twenty-four hours. As the suppuration diminished, the granulations sprung up, and in about fifty days, the cicatrix was completed, and his health, in a considerable degree, restored.

CASE 2. Serjeant Smith, of the 11th infantry, was wounded the 5th of July, in the breast, by a musket ball. The ball entered on the left side, between the sixth and seventh ribs, and came out near the spine, on the same side; I saw him on the third day after the injury. He then laboured under oppression of breathing, and his muscular strength was much prostrated. The sides of the wound were tumefied and inflamed, I, therefore, could not make a satisfactory examination of the direction of the ball: I supposed, however, from his anxious and hurried breathing, that the lungs were wounded. I bled him to the amount of a pint, and dressed his wounds with yellow basilicon. On the fourth day I bled him again; this bleeding seemed to relieve him much: I enjoined the strictest antiphlogistic diet on him, that the nature of our hospital stores admitted of. By some new arrangement in the wards of the hospital, he was left out of my list, and transferred to my colleague, Dr. Coltrin. I, therefore, did not see him again for eight or ten days; at that time the wounds in his side were discharging matter very profusely, and a few granulations had risen up. Air was inhaled and exhaled through the wound in the fore part of his breast, but not through the posterior wound. He believed himself to have

been struck by two balls at the same time ; if this be the fact, it will account sufficiently for the air rushing only through the anterior wound. About the last of August I saw him again ; he was then emaciated almost to a skeleton, and had a harassing cough, with purulent expectoration, which threatened to terminate his existence in a few days. He continued in this unpromising way for several weeks longer : the wound in the fore part of the chest healed up, but that in the back continued running. His wounds, during this period, had been dressed with yellow basilicon, or cerate, and his cough palliated by demulcents. The cough left him about the first of November, but his extreme emaciation and weakness continued. From this time he began to recruit a little, and in fair weather, sometimes ventured out of his apartment. We now entertained hopes of his recovery. About the first of December, the wound in his back discharged but little, and was nearly healed ; he was suddenly seized with lancinating pains near the wound, and spasms of the intercostal muscles, and diaphragm, which sometimes suspended his respiration for a minute or more. Our hopes now vanished, and the attendants were frequently in the act of laying him out for dead. Dr. Coltrin, and myself, visited him in concert ; on examining the wound in his back, I perceived an obscure fluctuation near it ; having made an incision with my lancet, a few spoonfuls of healthy pus were discharged, and relief obtained for the time. He was ordered to take twenty drops of tinct. thebaic, at night. The next day a small spicula of bone was taken out. The spasm and pain now left him, and he recruited again. The wound in his back healed in about twelve days, and he had a second return of this affection, as alarming as the first ; a similar treatment was pursued, which relieved him. On the 24th of December, he was sent to the general hospital, at Williams-ville, in a convalescent state, having had no subsequent return of his paroxysm, and bidding fair to recover entirely.

CASE 3. A private in the 9th infantry, had his radius broken about the middle, by a musket ball, which passed obliquely through the arm ; he was admitted into the general hos-

pital on the third day after the accident ; the arm was then slightly tumefied and painful, only a common dressing, with splints, was applied to it : between this time and the 25th day, frequent hemorrhages had occurred, which were commonly suppressed by a compress of square pieces of muslin, confined with a roller. The arm had been greatly tumefied, probably to three times its natural size, and a copious suppuration had followed, which relieved the inflammation and pain, but the patient's health was much impaired by a diarrhœa and hectic symptoms. Opium and bark having been tried, in vain, to arrest the latter, it was determined, on the thirty-fifth day after the accident, to take off his arm. I amputated it just below the insertion of the deltoid muscle : on the fourth day afterwards, I undressed it, and was much chagrined at finding that the adhesions of the flap to the muscles had been prevented by a number of maggots finding their way through the dressing into the stump, notwithstanding every precaution had been taken to prevent such an occurrence : I cleaned them out by injecting warm water and spirits of turpentine. On the fifth day, a new brood had come in, and insinuated themselves into the interstices of the muscles, producing considerable pain and irritation. The muscles had retracted, and left the bone jutting out about an inch, completely denuded of its periosteum ; a very slight suppuration occurred. The patient's health became worse, for, besides an aggravation of the aforementioned symptoms, a comatose condition was present. I sawed off the protuberant extremity of the bone, cleaned the wound with warm water, and ordered the tonic and stimulating treatment to be rigorously used. Nothing seemed to relieve him, and on the tenth day after the operation, and the forty-fifth from the reception of the injury, he died.*

CASE 4. John M'Gulrick, aged 45, of a dark complexion, and full habit, a private in the 100th British regiment, 4th company, was wounded and taken prisoner, at Chippewa,

* This case is inserted in order to show the effects of local irritation on a stump.

on the 5th of July, 1814; on the 7th of the same month he was brought to the general hospital, at Buffalo, with the rest of the wounded of the two armies. On examination by the superintending surgeon, the thigh was discovered to be fractured by a musket ball, about six inches above the knee joint. The limb was much swelled, and extremely painful, from the bandage applied in the first dressing being stiffened with blood, and too closely rolled. He was ordered to live on light food, have the limb frequently moistened with lead water, and secured with a bandage and splints, a dressing of cerat. simp. being used.

In consequence of the great number of wounded, the surgeons and mates of the general hospital were unable to attend to all the patients, and it became necessary to employ some of the neighbouring practitioners. It fell to the lot of this man to be placed under the hands of one of them, and I did not see him again till about the middle of October. I am, therefore, unable to say what treatment was pursued in the interim; from circumstances, however, I am induced to believe it was not of the most judicious kind. About this period, the services of the aforesaid practitioner being no longer wanted, he was discharged, and the soldier placed under the care of my colleague, Dr. Coltrin. On visiting the patient, he was struck with the peculiarity and precariousness of his situation, and was sensible that the preceeding surgeon had not done his duty: the case presented such difficulties that he requested assistance.

Oct. 16th. We visited the patient in concert, and found the following symptoms: He was reduced almost to a skeleton, there being little else but skin and cellular substance on his bones, his pulse quick and feeble, a wasting diarrhœa had been on him for several weeks, he was subject to profuse sweats at night, and had no appetite; to these general symptoms, was added, a most unfortunate condition of the broken limb. The thigh was shortened about four inches, in consequence of the extremities of the broken bone being allowed to pass each other; the two orifices where the ball had entered, and made

its exit, were still open, and discharged daily a large quantity of thin semitransparent pus ; a fistula was found running nearly up to the trochanter minor, and a large ulcer had formed on the sacrum, from continual lying in one position. Weighing all these circumstances, we were not slow in pronouncing an approaching dissolution ; had our opinion been otherwise, we should have determined immediately on amputation. There seemed so little chance for the patient's life, that nothing else could be done than to pursue vigorously the tonic plan, this we did, more from a sense of duty, than from hopes of success. He was ordered to take bark four or five times a day, and was allowed a pint of port wine.

R. G. Kino. gr. xv.—To be taken three times a day.

It was too late to think of restoring the limb by extension, and counter extension, as an adhesion had taken place between the bones, and an artificial joint had formed. We, therefore, only directed the limb to be dressed with basilicon twice a day, the matter to be carefully pressed out of the sinus, and a spiral roller, with a compress on the fistula, to be applied from the foot to the groin. The ulcer on the back was dressed also with basilicon.

This treatment was persevered in, with the addition of bitters, till the 1st of November, and with no amendment on the part of the patient ; we, however, were pleased, and thought him fortunate in not dying. The patient adhering to life with such tenacity, made us agitate the propriety of amputation, and we almost made up our minds for it, but as he was still in the same precarious situation, it was thought advisable to wait a few days longer, as they would probably determine his fate, or produce an amendment.

Nov. 5th. The same treatment continued to this date ; the patient no better, diarrhœa and hectic symptoms rather more urgent. As a dernier resort, we, this day, determined on amputation ; every thing was prepared, and the knife placed in the hands of Dr. —, hospital surgeon, who, not belonging to the hospital, as a mark of attention, had been invited

to perform the operation. He was dissuaded from it by Dr. —, of the — infantry, also a visitor, who, forming his opinion from the present condition of the patient, without taking into consideration the preceeding circumstances, denounced the operation as fatal to the patient, and involving the reputation of the surgeon; advising us, at the same time, to adopt the tonic treatment. But a full trial of that had been already made. I was, myself, inclined to believe, that the operation might probably be fatal immediately, or in a few hours afterwards; but as I considered it the only possible means of relief, and had maturely reflected on the advantages and disadvantages likely to result, it was with reluctance that I submitted to the opinions of the consulting surgeons, for the present.

Dr. Coltrin, and myself, having both acquired confidence from seeing the happiest issue from amputations under circumstances similar, but not so aggravated, determined on performing the operation by ourselves, without consulting or letting it be known to any other surgeons, let the event be what it might; we, accordingly, proceeded to the operation on the

10th Nov. At this time the patient's strength was completely prostrated, the diarrhœa and hectic fever still continuing in all their force; the sores on the back and thigh were no better. The limb was amputated about two inches below the trochanter minor; the patient lost but little arterial blood, and bore the operation beyond our expectations. He was put to bed, and ordered liq. laud. gtt. xl.

Nov. 11th. The patient somewhat better, rested tolerably well last night, less troubled with the diarrhœa.

R. Cert. Peruv. choch. min. to be taken four times a day.—Elix. vitriol, gtt. xv. to be added to each dose. A pint of port wine a day.—Allowed to eat any thing he fancied, which could be procured.

Nov. 12th. Rather better; medicine continued.

Nov. 13th. The symptoms considerably ameliorated, appetite excited, had but one stool yesterday, and one last night, nocturnal sweats less profuse, rested well; medicine continued.

VOL. II.—U u

Nov. 14th. Mending perceptibly; the first dressing was removed from the stump; it had partially united by the first intention, and was beginning to suppurate finely; the ulcer on the sacrum throwing out healthy granulations, and diminishing in size.

Nov. 20th. The patient much in the same state as on the 14th, except that the powers of life were so feeble in the sound limb, that a dry gangrene came on the big-toe, and the two adjacent toes, being probably induced by the cold state of the atmosphere. The extremity was cold and without perceptible pulsation, from the toes to the knee. The nurse was ordered to wash it twice a day with hot brandy, and apply a flannel roller from the toes to the groin; medicine continued.

Dec. 1st. The patient's health and strength considerably improved, appetite good, the dry gangrene still continued on the toes, without any effort of nature to separate the mortified parts; the heat of the limb was restored after a few applications of the hot brandy, pulsation perceptible in the anterior tibial artery, the stump and ulcer doing well, the latter nearly healed; we now considered the patient nearly out of danger: prescription of the 11th November continued.

Dec. 20th. We now considered the patient completely exempt from danger, and convalescing rapidly. He had picked up a little flesh, his appetite good, diarrhœa and hectic symptoms entirely gone, having but one or two stools in the twenty-four hours; the ulcer on the sacrum healed, and the stump nearly so: bark, elix. vit. and wine continued.

Dec. 23d. The general hospital being broken up at Buffalo, this patient was sent, with others, to Williamsville, eleven miles off; no question of his recovery was then entertained, and the only unfavourable circumstance was the gangrene on his toes, which still continued, nature shewing an indisposition to separate the living from the dead parts. He arrived at his journey's end without accident. The conclusion of this case I have still to be informed of, as I left the frontier the following day.

Preparation of Mercurial Ointment. Communicated for the American Medical Recorder, by Patrick Kerr Rogers, M. D. of Baltimore.

To prepare mercurial ointment according to the directions of our dispensatories requires much time and labour. This article, therefore, though one of the most important in practice, is rarely found in the shops in the state we would wish.

In some of the older pharmacopœias this ointment was directed to be made by triturating the mercury with turpentine before the fat was added. As the terebinthinate addition rapidly divides the metal, and hastens its oxydation, a great deal of labour was saved by its employment. But the turpentine renders the ointment too irritating for general use. It frequently produces, when rubbed repeatedly over any one portion of the skin, either painful excoriations, or a fiery efflorescence, or a crop of small corymbose tubercles, which require the remedy to be discontinued. These inconveniences do not, however, prevent the apothecaries of this country from still persisting in the use of turpentine in the preparation of this article.

A pure and bland ointment requires so much more labour in the preparation, that it cannot be vended at the same price, unless its strength be reduced. Hence, when a bland ointment is procured from the shops, it is commonly so weak as to disappoint our expectations in practice. Some apothecaries instead of turpentine, add a little sulphur to the metal to facilitate its division. A portion of æthiops mineral (black sulphuret of mercury), is thus produced; and the ointment has a very dark colour. Prepared in this way it bears a large proportion of fat, without appearing weak to the eye. The ointment which contains the sulphuret may be readily distinguished by its very dark, dirty colour.

The great usefulness of mercurial ointment has rendered its consumption, compared with that of most other pharmaceuti-

cal preparations, singularly extensive. This consideration, together with the difficulty of obtaining it at once bland and active, induced me in the year 1816, to make some experiments on its preparation. My object was to discover some method of producing an unirritating ointment, with less labour than is necessary in that laid down in the modern dispensaries.

The experiments of Dr. Priestley shew that linseed oil, as well as terebinthinate substances, decomposes atmospheric air pretty rapidly, by abstracting its oxygen. This fact suggested to me the probable efficacy of *linseed oil* in hastening the oxydation of mercury. It was, therefore, the first article which I subjected to experiment. I succeeded in preparing an active ointment, by its assistance, with less than one-twentieth part the labour which would be necessary in making it by triturating the metal with fat alone, in the ordinary way. But the process was long on hands, the materials requiring to be exposed several weeks to the air. This method I communicated to Dr. Pascalis, of New York, about two years ago, with an explanation of the *modus agendi* of the linseed oil, which I now consider as very incorrect. The view which this paper presents, may, I think, be considered as, at least, an approximation to the truth.

To avoid prolixity, I shall omit detailing the numerous experiments I have made on the division and oxydation of mercury, by triture, with adipose, oily, terebinthinate, and balsamic matters: and shall state, as briefly as I can, those results which appear to me to be connected with practical utility.

First, or most active class.

- 1 Spermaceti oil.
- 2 Venice turpentine.
- 3 Linseed oil.
- 4 Rancid olive oil.
- 5 Balsam Peru.
- 6 Old tallow.

These articles, each rubbed from one to five minutes, with an equal volume of mercury, are efficacious in dividing it in

the order in which they are enumerated. The tallow must, during triture, be kept of the consistence of an oil, by placing the mortar in a sand bath duly regulated.

Second class.

- 1 Oil of turpentine.
- 2 Oil of amber.
- 3 Oil of rosemary.
- 4 Oil of lavender.

The articles of the second class are much less efficacious in dividing the metal than those of the first ; and they soon suffer it to precipitate and collect at the bottom of the mortar.

Third class.

- 1 Balsam capivi.
- 2 Old lard.
- 3 Castor oil.
- 4 Fresh olive oil.
- 5 Almond oil.
- 6 New lard.

These are blended with the metal with great difficulty, requiring, at least, twenty times the labour of the articles of the first class.

The division of mercury, by an oily substance, or resinous juice, is facilitated by the degree of its fluidity, and of its specific attraction for the metal. A perfect fluid is most easily spread over every new metallic surface, during the act of triture. And a heterogeneous affinity of considerable force has the effect of successfully resisting the homogeneous affinity of the globules of the metal, which tends to reunite them into one mass.

But *to sustain* the metal in a state of division, a great degree of fluidity in the dividing substance is disadvantageous. The viscosity, or homogeneous affinity of the particles of that substance for one another, and their heterogeneous affinity for those of the mercury are two properties which, when united, resist most effectually two opposing forces in the metal, namely, the homogeneous affinity of its globules, and its great specific gravity. Hence, the capacity of the above substances for sus-

taining mercury in a divided state, observes a different order from that of their efficacy in dividing it.

The sustaining power of the *first class*, after eight minutes triture with an equal bulk of the metal, is in the following order:—

- | | |
|------------------------------|----------------------|
| 1 Old tallow, rendered fluid | 2 Balsam of Peru. |
| by heat, and suffered to | 3 Linseed oil. |
| cool as soon as the triture | 4 Spermaceti oil. |
| ends; but if rubbed soon | 5 Olive oil. |
| after, while cold, the me- | 6 Venice turpentine. |
| tal collects into a mass. | |

The oxydizing power of these substances, under equal triture and time of exposure to the atmosphere, is in an order different from both their dividing and sustaining power. From my experiments, their oxydizing influence arranges them thus:—

- | | |
|--------------------------|-------------------------|
| 1 Balsam of Peru. | 5 Rancid olive oil. |
| 2 Linseed oil which has | 6 Old tallow.* |
| been long exposed to the | 7 Newly pressed linseed |
| air. | oil. |
| 3 Spermaceti oil. | 8 Sweet olive oil. |
| 4 Venice turpentine. | |

All of these substances contain oxygen as a constituent principle. They appear to be capable of combining with indefinite proportions of it; and from every considerable addition, they undergo an obvious change in their properties. Thus terebinthinate juices are converted into resins, and bland oils are rendered rancid and acrid. Their efficacy in the oxydizing of mercury seems to depend on at least four circumstances.

1. An extremely divided state of the metal, exposing an infinitely extended surface.

2. The quantity of oxygen in the dividing substance above what is essential to its constitution; and the readiness with which it yields it to the metal. Hence, rancid olive oil is a better oxydizing agent than that which is perfectly sweet.

* New tallow, and suet and lard of any age, appear to have a very feeble oxydizing influence.

3. The avidity with which the dividing substance attracts atmospheric oxygen. Hence, lard, which may be exposed for a great length of time to the atmosphere without becoming rancid, has a very feeble oxydizing influence.

4. The decomposition of a portion of the dividing substance. In attending to the changes produced in the metal under triture with different substances, I have suspected that in every method of uniting with it, resinous juices, or oil, or fat, a portion of the matter employed is entirely decomposed. The oxygen of this portion combines with the metal; and the remaining principles, in their nascent state, enter into new combinations. When, by very laborious trituration, mercury and lard are formed into an ointment, this, I conceive, must necessarily take place.

It is difficult to devise any method of ascertaining with precision the chemical state of the metal, when changed by triture with any of the above substances. It is probable that in most processes some carburet of mercury is formed, and that in some of the following, a small portion of carbonate of mercury is produced; the carbonic acid being furnished through the medium of changes in the fat, or being gradually abstracted from the atmosphere. Old mercurial ointment always contains, I imagine, more or less of carbonate, and of sebate of mercury.

Mercurial ointment may be prepared by the following methods, with very little labour:—

First.—Take an ounce and a half of balsam of Peru to every pound of mercury. Triturate for five or eight minutes, and the mercury will be, not only extinguished, but apparently oxydized. Then add the proper proportions of suet and lard to make an ointment. As soon as the whole is well mixed, which may be done in three minutes, the ointment has a fine blue colour, and possesses full activity.

This preparation, though not adapted to general use, particularly where frequent friction is to be employed, may, in some cases, be preferable to any of the following: for instance,

in the local treatment of hæmorrhoids, I would suppose it superior. The balsam of Peru has the effect of a topical anodyne. It is well known to mitigate the pain and smarting of recent slight organic læsions, and of old irritable ulcers. We may resort to the balsamic mercurial ointment in extemporaneous prescription, with convenience; since a portion of it may be prepared in as short a time as is necessary to compound and make up a few pills. The process has been performed, in my office, in less than eight minutes.

Second.—Take an ounce of raw linseed oil, and six drachms of old tallow, to every pound of mercury. In warm weather the proportion of tallow must be increased to an ounce, or an ounce and a half. Triturate for five minutes, in a mortar of a broad flat form. Repeat the triture twice a week for a minute at a time. At the end of three weeks, add the full proportion of suet and lard to make an ointment. Continue to triturate as before, for two weeks longer. The ointment will then have a fine blue colour, and possess perfect activity.

Though this process is extended to five weeks, the labour required to complete it is performed in less than half an hour.

Third.—Take an ounce of raw linseed oil which has been long exposed to the air, and half an ounce of old tallow, to every pound of metal. First, divide the mercury by triturating it with the oil for one minute; then add the tallow, and triturate one minute more: lastly, add the proper proportion of suet and lard to make an ointment, and rub the whole for three minutes.

A mercurial ointment, inodorous, of a fine deep blue colour, and perfectly bland, yet active, may thus be prepared in five minutes. By means of apparatus sufficiently large, it is possible to prepare twenty or thirty pounds of this ointment in ten minutes.

The action of the metal on the old oil and tallow destroys their rancid odour, probably by deoxydizing them; so that the acrimony which hyper-oxygenation gave to those substances is entirely removed.

The linseed oil, in my possession, which effects so rapid a change in the mercury, has been kept since June last, in an unstopped bottle, and occupied only about one-sixth of its capacity. In June this oil required to be treated as in the *second* method. At this time, January, it acts, in every trial, as stated in the *third*.

Fourth.—Take an ounce of rancid olive oil, such as is generally in the hands of the apothecaries, and six drachms of old tallow, to every pound of metal. In summer, increase the proportion of the tallow. Triturate at first five minutes, and afterwards one minute, twice a week, for three weeks. Then add the proper proportion of suet and lard, to make an ointment; and triturate for a minute every other day during one week.

An inodorous ointment, of a deep blue colour, is thus formed, with less than twenty minutes labour.

By the same agents an ointment may be made in ten days, by triturating five minutes daily. The whole time of triture will be only fifty minutes.

Fifth.—Take an ounce of spermaceti oil, and six drachms of old tallow, to each pound of metal. Divide the metal by the oil; then rub in the tallow. After five minutes triture, the full proportion of suet and lard may be added. Any quantity of ointment may be promptly made by ten minutes labour, with the assistance of the spermaceti oil.

The product of this process has all the useful properties of common mercurial ointment; but it retains, in a slight degree, the unpleasant odour of the oil.

Sixth.—A few pounds of ointment may be well prepared in eight or ten minutes, by first dividing the mercury by means of a portion of that which contains the linseed oil: twenty pounds may be prepared in, perhaps, as many minutes.

Take an ounce of strong mercurial ointment, which has been made by the *second* or *third* method, and is at least one month old, to each pound of metal. Triturate until the mercury is perfectly extinguished, which may be effected in three

or four minutes ; then rub in the full proportion of suet and lard.

Some apothecaries employ old mercurial ointment, such as they had prepared in their customary way, for the purpose of facilitating the division and oxydation of the metal ; and they find it of considerable efficacy. But unless the old ointment had been compounded, in the first instance, with turpentine, its oxydizing power is much inferior to that containing the linseed oil.

A speedy and easy method of preparing this ointment is taken by Dr. Thomas, from the Medical, Surgical, and Pharmaceutical Repository. It consists in rubbing together old ointment and mercury, in the proportion of one part of the former to three of the latter, before the lard is added. That method, requiring a pound of old ointment to every three pounds of metal, is evidently not so well adapted to pharmaceutical practice as the one proposed above. *One pound* of old ointment, prepared in the ordinary way, will not so quickly extinguish and oxydize three pounds of metal, as will *two ounces* of that made by the addition of linseed oil.

Seventh.—It will be an important improvement of the second and fourth methods detailed above, to substitute for the tallow a little old mercurial ointment, which had been made by the assistance of linseed or olive oil.

Take an ounce of either of these oils, and an ounce of the ointment to each pound of metal. The new ointment may be made up in the small way, in eight or ten minutes. It is possible to prepare thirty pounds in a quarter of an hour.

By adopting this method, the apothecary may always have on hand, an ointment of sufficient age and efficacy, (one month old is sufficient) to enable him to prepare, at any time, a new supply. He will, in time, lose this advantage by proceeding as in the *sixth* method.

Or it will answer the same purpose to keep always on hand a quantity of linseed oil, exposed to the air, in an unstopped tincture bottle. The addition of old ointment does not sensibly improve the efficacy of linseed oil which has been a few months in contact with the atmosphere.

On the Disease produced by the Action of the Canine Virus on the Human Body. By James Mease, M. D.

(Continued from page 184.)

MANY supposed cases of the actual disease have been recorded as cured, but upon strict examination of the symptoms, the circumstances of the bite, and the actual madness of the animal that inflicted it, I was, and am still satisfied that the canine virus had no operation in the production of the disease attributed to it, in the cases alluded to. Several of these cases have been noticed by me in former publications,* to which I refer the reader. Some cases, however, which we are bound to believe, really were caused by the canine virus, are reported to have been cured, and these I shall now specify.

1. The first two that I will mention fell under the care of Dr. Moseley, of London, and are recorded in the sixth edition of his treatise.† Both were cured by a free use of mercurial ointment. In one, the mouth was affected in forty-eight hours; and he remarks, that "this was the first case of complete hydrophobia, from the bite of a mad dog, successfully treated, on record." In the second, the mouth became sore in twenty-four hours, and the next day complete salivation took place.

2. A third case was cured by Mr. Rice Wynne, of Shrewsbury, England:‡ this was by copious bleeding. "Twenty ounces were taken away from a large orifice, in six minutes,

* Inaug: dissertation and observations on the arguments of Prof. Rush, in favour of the inflammatory nature of the disease produced by the bite of a mad dog. Philadelphia, 1801. Cox's Med. Museum, Philad. vol. iii. p. 201. This refers to Dr. Burton's case, of the supposed disease cured by the loss of 138 ounces of blood, in nearly four days. See N. Y. Med. Repos. Hexade 2, vol. ii.

† On Hydrophobia, its prevention and cure, 4to. Lon. 1813. p.p. 49. 74.

‡ Particulars of the successful treatment of a case of Hydrophobia, by R. Wynne, Shrewsbury, 1813.

which produced fainting: the pulse was scarcely perceptible for an hour." The symptoms abated, but returning the next day, the loss of ten ounces more also produced fainting, and depression of pulse as before; the patient becoming perfectly composed and free from convulsions. A purge was then given: having also taken calomel for nine days, his mouth remained sore for nearly three weeks.

3. Dr. Alexander Berry, of Madrass, relates, that he cured two cases, (certainly of a mild nature) by purges, injections, and blisters.

4. An account is related by Mr. J. Steddy, surgeon in the British East India Company's service, of a supposed case of this disease being cured by copious depletion, and inserted in the *Edin. Med. and Surg. Journal* for April 1817; but the expressions are somewhat ambiguous, for while he says it "was successfully treated," he adds, "there is at this moment every prospect of perfect recovery." It would appear from this, that at the time the letter was written, the disease had not terminated. Mr. S. says, that "the patient, a woman, recollects having been much alarmed by a dog jumping on her about eight or ten weeks ago, but has not any remembrance of a bite." No argument in favour of bleeding ought to be drawn from this case. I notice it here, that I may give every statement in my reach, in favour of the depleting plan, although my belief is, that it will not cure the disease.

5. Two cases are recorded in the medical journals of the United States, and of England, as being cured by Mr. Tymon and Dr. Shoolbred, of Calcutta, by bleeding to fainting. As these have excited considerable attention among medical men, they merit particular notice.

Mr. Tymon bled until scarcely a pulsation was to be felt in either arm: then gave 100 drop of laudanum; and ordered injections of 300 drops more every second hour, a drachm of mercurial ointment to be rubbed in, and four grains of calomel taken every hour. The gums became tender from the mercury on the evening of the second day, and on the sixth day

the patient was salivated. On the fourteenth he was discharged from the hospital.

6. Dr. Shoolbred bled to the extent of two pints and upwards, when faintness coming on he stopped the blood. Sleep followed: the symptoms were relieved even during the bleeding, and the man drank freely. The symptoms returning, he was again bled to fainting, and he took 28 grains of calomel in the course of eighteen hours, with seven of opium, when the mouth became sore. On the fifth day he was free from all complaint.

Now, there are some reasons to be offered why doubts may exist of there having been a mistake in the cause of the diseases of those two patients. And,

1. As to Mr. Tymon's patient:

The actual madness of the dog was not ascertained.

2. The symptoms were different from those which we know occur in the true disease: thus, the violent screaming, the violent agitations of the body, which required eight men to restrain: the constant delirium, the attempts to bite after being bound to his cot, give us more the idea of an inflamed brain, than of the disease resulting from the canine virus, in which none of those symptoms appear.

3. The duration of the disease, moreover, is quite unexampled; and Dr. Shoolbred, in his remarks on Mr. T.'s patient, allows that he was evidently under the impression of the mercury before he could be said to be free from disease.

In Dr. Shoolbred's case also, it would seem that mental agitation had more influence in the production of the symptoms than the canine virus. No attempt having been made to drink, it is impossible to say whether any difficulty existed with regard to it or not: a horror of water he certainly had, and the sight of, or mention of it, caused great distress; the same symptom, however, and others mentioned by Dr. S., have often been remarked as occurring in other diseases, particularly phrenitis, hysteria, and malignant fevers. The savage expression and contortions of countenance; the starting of the eyes from their sockets, and their suffusion with blood, do

not take place in the real disease, except during the spasmodic difficulty of respiration, which, at intervals, attack the sick, and may be considered as one of the most certain signs of the complaint. The madness of the dog, moreover, that gave the bite was not put beyond doubt. The note requesting his admission into the hospital, stating merely "that he had been bitten in the leg, about three weeks before, by a dog, *believed to be mad.*"

The calomel given by Dr. S. to the man may have contributed to his recovery, but no credit is attributed to it, although, as in Mr. Tymon's patient, entire relief did not take place until its effects were perceived.

But granting that the cases of Mr. T. and Dr. S. really proceeded from the operation of the canine virus, and that their cure was effected by bleeding *ad deliquium*, it will, I apprehend, now appear that this remedy is not infallible, even when used in the manner required by its advocates; and of its want of success, I shall first adduce the declaration of Dr. Shoolbred himself, who told a friend of Dr. Thacher, of Plymouth, Massachusetts, that it had not succeeded with him in a case in which he had tried it, after the publication of those above mentioned. This fact, which Dr. Thacher communicated to me in the year 1816, together with the total silence of the British physicians in the East Indies, as to its efficacy, after Dr. Shoolbred wrote; nay, the failure of bleeding when tried by two of them, and by others in Europe, adds strength to the belief that neither of the patients treated by Mr. T. and Dr. S. laboured under the true disease.* Cases of these failures I shall now mention.

I may, however, previously remark, that bleeding, *ad deliquium*, was early recommended in this disease by Boerhaave, and the great authority attached to his opinion, induced his pupils to try it upon all occasions. Among others, it was put

* A letter I received two years since from Calcutta, mentioned that Dr. Shoolbred died on his voyage to England; we shall thus be deprived of hearing any explanation of the difficulties attending his case from him.

to the test by Dr. Rutherford, in the Edinburgh hospital, in the year 1750, but without success. The patient had been bled in the morning, but the quantity lost is not stated: "66 ounces more were taken away in the afternoon, in a *gradual manner*, from which evacuation, he became sick and a little faint, the pulse became smaller and lower, but the aversion and horror of liquids were undiminished." Dr. S. who notices this case, ascribes the failure of the remedy to the blood not being suddenly taken away; but we see that the exhausting effects of the operation, upon the occurrence of which he lays so much stress, actually took place, and yet without curing the disease; and Dr. Rutherford candidly, and much to his honour, declared his disbelief, in consequence of his failure, of the theory of its inflammatory nature.

2. Mr. Haynes, surgeon, of Chipping-Norton, England, relates a case equally strong. The patient was bled, *ad deliquium*, on the day after the attack, but he died two days after.*

3. Dr. Physick took away 62 ounces at four bleedings, in twenty-four hours, in quantities of 16, 14, 20, and 12 oz. The boy, aged sixteen years, did not indeed faint, but after the third bleeding, "his stomach became sick, and he called for something to puke in." Not the least alleviation of the symptoms took place.†

4. A fourth case is related by Mr. Marshall, surgeon at Colombo, Ceylon.‡ The patient, a young lady, aged fifteen, lost 24 ounces of blood; fainting followed; and "before it was closed, the pulse was scarcely to be felt at the wrist." She expressed herself relieved soon after the vein was opened, but the symptoms returned with increased violence, and she died at nine at night of the same day.

5. A fifth case fell under the care of Mr. Ballingall,§ a

* Mem. Med. Soc. Lond. vol. v, p. 297.

† See Dr. P.'s excellent account of this case in the New York Med. Repos. vol. v, p. 1, and my remarks on it, p. 292, of the same volume.

‡ Edin. Med. and Surg. Journal, vol. x, p. 26.

§ Ditto, ditto, vol. xi, p. 74.

British army surgeon, at Trichinopoly, in 1813. Forty ounces were taken away from a large orifice, "which produced excessive languor and faintness, although without actual deliquium. Not the least alleviation of the disease was perceived. In the afternoon of the same day, 16 or 18 ounces more were taken away; the pulse was then scarcely perceptible:" he died at a quarter before five o'clock.

6. A case minutely recorded by Dr. Albers, of Bremen, in the *Edin. Med. and Surg. Journal*, vol. xi, p. 413, in consequence of seeing the accounts of the East India cases, is decisive as to the failure of copious blood-letting in curing the disease. From the patient, a woman, aged thirty-four, he took 40 ounces of blood six hours after the appearance of the symptoms: and at five *p. m.* of the same day, the anxiety and restlessness being much more violent than in the morning, the pulse quick and full, and the heat increased, 40 ounces more were taken away; and 20 ounces more at eleven at night: she, nevertheless, died at four o'clock next morning.

7. A seventh case is related in the "*New Medical and Physical Journal*," of London, vol. ix, p. 160, by Mr. Bellingham. The patient, a child of three and a half years of age, was bled at eight o'clock in the morning, of the 17th October, 1815, a few hours after the first symptoms of indisposition had appeared. A vein of the arm was opened, and suffered to bleed by a free orifice, *ad deliquium*; the quantity taken away was 11 ounces. "The pulse," which was before "120 in a minute, and small, immediately sunk to 60:" "at midnight, the pulse was 144, and much fuller; eight ounces more of blood were taken away from the orifice:" this flowed with the greatest freedom, without the application of any ligature above the orifice on the vein. The arterial action seemed to be very great. After this bleeding, he was for the space of a minute, violently and universally convulsed; but upon being returned to bed, expressed himself perfectly free from pain. He remained tranquil until five o'clock, when the spasms became more violent and general, and returned in rapid succession till nine,

when, in a severe convulsive struggle, he expired. His senses remained, as usual, perfect to the last.

Bleeding was also tried in conjunction with purging and blisters, by Dr. S. P. Griffiths, in 1802, in Philadelphia, in the case of a child aged five years, the particulars of which are recorded by Dr. Rush, in the *New York Med. Repos.*: Hexade 2d, vol. i. p. 105. The quantity of blood taken away is not mentioned.*

Dr. Parry, of Bath,† bled a boy, aged five and three-fourths years, from the right temporal artery, to the amount of six ounces, on the 16th of June, in the morning, and at four *p. m.* of the same day, "one or two ounces were taken away from the left jugular; the blood ceasing, full nine ounces were taken from the arm, when he became quite faint and pale." The disease first showed itself on the 14th of June, but it was not fully formed until the 16th. The tremors, head-ache, febrile heat, and convulsive twitchings were less after the bleeding, "precisely in proportion as it diminished the vital powers." A similar remark applies to the temporary alleviation of the symptoms, observed in the other cases I have mentioned, where bleeding was unsuccessfully used.

In the year 1815, Dr. Hartshorne bled a negro woman ill with this disease, in the Pennsylvania hospital, to 30 ounces; viz. 10 ounces from the arm, and 20 ounces from the temporal artery, at the same time, but fainting did not take place. It may be remarked, that in Mr. Wynne's patient, (who is said to have been cured by bleeding,) fainting was caused at the first operation, by the loss of twenty ounces, and again by ten ounces.

* Dr. Rush, in his remarks on this case, says, "The theory of the disease would lead us to expect a remedy for it in blood-letting. But this, though now and then used with success, is not its cure: owing, as we now see, to the mortal seat of the disease being so far removed from the circulation, as not to be affected by the loss of blood, in the most liberal quantity. As well might we expect the inflammation and pain of a paronychia, or what is called a felon on the finger, to be removed by the same remedy."

† Cases of Tetanus and Hydrophobia, Bath, 1814, p. 58.

Lastly, it was also used in the case of Madam Bruneau, of Montreal, in Canada, in 1817, but, as the account which was published in the newspapers of that city say, "*with evident disadvantage.*" The quantity taken away is not stated.

The foregoing may be considered as "a view of the whole ground," on the subject of bleeding, and from it practitioners will be enabled to make up their minds as to the propriety of employing that remedy in cases that may fall under their care. If, notwithstanding the cases I have adduced, in which it failed, and the observations I have made on those published by Mr. Tymon and Dr. Shoolbred, they should still think it worthy of trial, I request that they will put it in practice as early in the disease as possible, and in the manner, and to the extent required by its advocates; that is, to take away blood from a large orifice, and until actual fainting take place. The continuance of the morbid action is but short, and exhaustion soon follows, when to bleed would only add thereto. In case of being consulted about a bite, the family of the sufferer should be requested to give the earliest notice of general indisposition; but the mind of the person bitten ought to be kept perfectly quiet: for mental agitation has repeatedly hastened the attack, and without such exciting cause, it might not have even appeared.

My own opinion is still in favour of the powerful external and internal use of mercury: and I believe that if the system could be early impregnated with that mineral, so as to affect the mouth, the disease would be overcome. But I protest against it as a preventive, not only because of the extreme uncertainty in the time of the operation of the virus,* but because numerous cases are recorded, and many more have occurred, in which the system has been kept under the influence of it for different spaces of time, and yet the disease afterwards appeared. Dr. Moseley, I am aware, recommends it highly, and adduces many cases to show the grounds of the confidence reposed in it: those are cases of persons who were

* See page 184, line 6th from bottom, for "three," read four.

bitten, and who remained well after taking mercury, (applying at the same time, caustic potash, or butter of antimony to their wounds,) but there is much more reason to attribute their safety to the discharge excited from the bitten part by the stimulating applications, which he used and recommends, than to the operation of mercury upon the system at large.

The oxymuriatic acid has also been lately recommended, both as an internal and external remedy (as a preventive, I presume,) to the people of the United States, by the mayor of New Orleans, Mr. Macarty, on the authority of Dr. Chabert, who copied the account from the French gazettes.* The discoverer of this remedy is said to be professor Brugnatelli, and the success of it is also said to have been fully proved. It is not asserted that cures of the actual disease have been made by it, and until we have more particulars of its success we may withhold our confidence in its curative powers. We are well acquainted with the effects of all the mineral acids on the human body; and the oxymuriatic acid (now called chlorine) in particular, about twenty years since was greatly eulogized by professor Reich, of Germany, as a sovereign cure "in all cases of fevers, whatever appellation they may have:" nay, he

*** A CURE FOR CANINE MADNESS.**

Mayorality of New Orleans.—Mr. Chabert, a physician from the University of Montpellier, lately arrived in this city, has just made known to me a remedy for the canine madness, which has been pointed out as a specific by the Italian physicians.

That remedy was published in the Piedmontese Gazette of the 8th of May last, from which it is literally copied by Mr. Chabert himself, before his leaving France.

"Thanks to the celebrated professor Brugnatelli, an efficacious remedy has, at last, been discovered against canine madness, perhaps the most horrid of all diseases. That remedy consists in hydrochlore (acid muriatic ox: aqueux) used as well inside of the body as on the exterior parts of it. The wound produced by the bite of mad animals must be washed with it. *It appears that that substance destroys the hydrophobic poison, even when used several days after the fatal bite.* A number of well authenticated cures operated by that simple means, in the great hospitals of Lombardy, do not permit to doubt the powers of that precious remedy."

New Orleans, Jan. 15, 1818.

AUG. MACARTY.

extended its use even to the disease now under consideration, in which he gave it as his opinion, it would be found highly successful. But what we know of this acid will not, I apprehend, induce any American physician to use it as an internal remedy in the disease: the impression required to be made upon the system while under the effects of the canine poison, being too great, and to be too sudden for the slow operation of the acid. It will strike, moreover, every one, that as an internal remedy, in the actual disease, a great objection to the use of the said medicine, is the horror of all liquids that generally attends it: and to avoid the suffocation they excite, they should be brought near the patient's mouth in a covered mug, or tea pot, and sucked up by a tube of elder, or of quills. If the acid be used, it ought to be diffused through mucilage of gum arabic, of quince seed, or flax seed, or of that *first of demulcents*, the inner bark of the slippery elm (*ulmus aspera*), and taken to the extent of a drachm every hour. As a caustic wash to the fresh wound, it would answer as well as any other acid. When united to antimony, it was formerly recommended by Mons. La Roux, of France,* under its old name, butter of antimony, as a caustic to destroy the canine virus, and the parts infected by it after a bite, and is still used by Dr. Moseley, as already mentioned, where the wounds are deep, and their bottoms cannot be reached by caustic potash, which is his favourite remedy.

My objections to caustic applications are already given.† With respect to the treatment of the bitten part, Dr. Moseley further says, that "he formerly recommended incisions to be made, to lay open every part to the influence of the caustic; but further experience has convinced him that incisions are al-

* Mem. Royal Soc. Med. Paris, 1783, part 2d.

† A striking instance of the failure of caustic in preventing the disease, occurred in the case of the child who died under Mr. Bellingham's care, and mentioned in p. 344: "the wound was slight and superficial, being rather an abrasion of the delicate cuticle of the part, than laceration of its substance. Potassa fusa was freely applied to the part, and occasionally repeated during the ensuing month, so as to occasion successive sloughs."

ways unnecessary, and often impracticable without danger." Mr. Gilman's suggestion as to the danger of inoculating the sound flesh, in consequence of the knife used to dilate the bitten part being contaminated by the virus, and the knowledge of the fact, that many cases of the disease have occurred after fresh dilatation, for the purpose of applying caustics, have induced me, after mature reflection, to recommend that it be never attempted.

From the violence and singularity of the symptoms in this disease, produced by the action of the canine virus in the system, it was naturally supposed that some clue to its successful treatment would be discovered from dissections; and accordingly examinations of the internal parts have been repeatedly made: but I regret to say, that, until lately, expectations have not been realized. Erysipelatous inflamed spots on the stomach, and slight distentions of the vessels of the œsophagus, have generally, and congestions, in the lungs, have sometimes appeared, and serving to strengthen the belief of the inflammatory nature of the disease, have imboldened the continuance of the depleting plan: the consequences of which have been fairly stated in the foregoing pages. Recently, the brain and spinal canal have been particularly attended to; and in the account of a dissection, recorded by Mr. Webster, in the *Lond. Med. and Chirurg. Review*, for October, 1817, "the membranes of the brain were found highly vascular, with considerable effusion. But the greatest marks of disease were in the coverings of the pons varolii, medulla oblongata, and upper part of the spinal marrow. These parts are said to have formed one crust of inflammation. On the spinal marrow this crust was more intense, than on any of the other parts."* Dr. James Sanders, of Edinburgh,† noticing the dissection by Mr. Webster, says, "that the appearances detailed by him are precisely of the same kind with those which he has uniformly

* Dr. Ferriar found many years since, preternatural distention of the pia mater, with a limpid fluid. The quantity of water in the ventricles, and round the spinal marrow somewhat unusual.

† *Med. and Chirurg. Review*, January, 1818.

found in trismus, asthma, pertussis, croup, and all spasmodic affections." The colon was contracted: this last effect of the disease was also found in the woman who died under Dr. Hartshorne's care, in the Pennsylvania hospital; four inches of it were contracted to a diameter not exceeding half an inch. These appearances I have mentioned, convince me more strongly of the ORIGINAL OPERATION of the virus upon the nerves, and the organs depending upon them for the due performance of their functions; these are, the muscles of the body, the organs of respiration, and the heart.* This theory is proved incontestably, by some of the most striking phenomena exhibited by this disease, and which have hitherto been totally inexplicable, and must remain so, if it be not admitted. I allude particularly to the almost total want of command which sufferers in this disease exhibit over their voluntary muscles, and which Dr. Parry justly remarks, "always overact the intention of the mind;" to the hurried and convulsive respiration, the sighing, the irregular action of the muscles of the throat, and the distressing affection of the præcordia, which almost so uniformly characterize this fatal complaint. The cerebral system generally remains unaffected; hence, we see patients in this disease, retain their senses to the last, except during the temporary duration of the spasmodic affections into which they are occasionally thrown.†

The ganglionic system is generally free from morbid affection; hence, we see the appetite remains good, and even the

* The heart, in some cases, has been very much contracted: the pericardium constricted, and strongly annexed to the heart: in others very dry.

† The cerebral system is only affected by the re-action of a law of the animal economy, "whereby impressions having been transmitted from the cerebral system, to remote parts of the body, and having excited there a peculiar action in them, if by any other means the parts take on a similar action; the cerebral system becomes affected by association, as if the cause were originally seated in the brain. Thus one stage of the paroxysm of an intermittent, excites in the mind a sensation of cold, although the surface of the body be actually above the natural standard of heat. So also in hydrophobia, the tremor of the muscular parts, which is always associated with the idea of fear, excites that idea in the minds of the patients." Reid, p. 96.

calls for food sometimes urgent. In the end, it shares with the fate of the cerebral and spinal systems.

Thus the further progress we make in the investigation of this complaint, the nearer we approach to the true theory of it, and to the development of the means likely to its cure.

Conformably to this theory, and guided by the symptoms in tetanus and hydrophobia, the close analogy of which I have heretofore dwelt on, and I may now add, proved by dissections particularly of the spinal canal;* we should expect, that stimulating the surface over the spine would be highly useful, by preventing internal determination of arterial action to a vital part; and I am happy to say, that Dr. Hartshorne found in August, 1814, and several times since, the application of caustic potash to the different parts of the spine, successful in curing cases of tetanus.† In hydrophobia, Dr. Monges tried the actual cautery to the same part without effect; but this was done in the afternoon of the third day of the disease, and the patient died the night after. The iron was applied to each side of the spine, from the nape of the neck, twelve inches down. The patient was a boy, twelve years old, and did not complain much from the burning. In one of Dr. Hartshorne's tetanic patients, the renewed applications of the caustic was asked for, probably because the pain from it was less than that arising from the spasms, and prevented the latter from coming on. The actual cautery would seem to be too violent, and less adapted to the altering of the diseased determination than the lesser external stimulus of the caustic, which I would certainly try, if a case of either tetanus or hydrophobia fall under my care. Local bleeding along the course of the spine, promises the most

* Dr. Reid, of Dublin, has given a coloured plate of the morbid appearances in the spinal marrow in tetanus. He quotes a passage from Bursarius, to show that diseased appearances in the spinal canal had been found in tetanic subjects, by Fernellius, and others. *On Tetanus and Hydrophobia*. Dublin, 1817

† His mode of using it was to tie a piece of sponge to a fork, and after dipping it in a solution of the caustic in water, in the proportion of a drachm to the ounce, to apply it along the spine.

important aid in the cure, by lessening the tendency to extravasation in the vessels of the part arising from the stimulus operating on its arteries, and which is caused by the irritation of the nerves originating therein. This local depletion and relief of the internal oppressed and engorged vessels, it must strike every man of reflection, will be most certainly effected; *first*, by cupping and scarifying the course of the spine, and by the subsequent and *extensive* application of leeches.

I am now about to give a new view of this disease. Hitherto we have always deemed it essential that a certain set, or assemblage of symptoms, should proceed from the operation of the virus of a rabid animal, to entitle them to constitute the disease known by the popular name of hydrophobia; but I shall now render it probable, that a disease, equally severe as one certainly arising from that cause, and in some cases equally fatal, has proceeded from the mere bite of a dog, which, if actually mad at the time of inflicting the bite, recovered, and did not die of the complaint. Setting aside the authority of the case mentioned by Morgagni,* which he did not see, but was communicated to him by a friend, in which the disease was excited by the bite of a mad cat, I shall proceed to mention three to which more credit may be attached. The first is from Dr. Joseph Glover, of Charleston, S. Carolina, and was forwarded to me some years since.

A CASE OF HYDROPHOBIA.

Abraham, a boy about thirteen years of age, was taken, on Wednesday the 4th of January, 1802, at four o'clock, *p. m.*

* Letter lxi. The man was bitten by an enraged cat: febrile symptoms followed a few days after, with slight delirium, but on the fourteenth day, he seemed quite well. At every full moon after that, for twenty-two months, the wound was surrounded with a livid colour, and irritation was felt in it, which, reaching the præcordia, required bleeding to relieve it: these symptoms then returned at every fourth full moon only, until the fourth year after the bite, that is, the time of writing the account!! Such a statement attaches no credit to the writer's authority.

with head-ache, lassitude, and drowsiness. On the morning of the next day he became wakeful, and the head-ache was more distressing, accompanied with a spasmodic affection of the œsophagus; a dose of salts was now administered, which proved emetic: but not putting a stop to the progress of the disease, and the increasing distress of the symptoms producing some alarm, I was sent for on the afternoon of the sixth. I found the boy perfectly rational, but in great distress from the frequent contractions of the œsophagus and glottis. His pulse was quick and very frequent. His pupils were dilated, and head-ache severe; nor had he slept from the morning of the fifth. He had dread of water, the sight of which produced immediately the spasmodic affection, which was also induced by the quiet motion of a watch before his eyes, by sound, or even by the agitation of the air, in the opening of the door, the latter of which he frequently complained of.

On inquiry whether he had been bitten by a dog, I was shown by the boy himself, a mark on one of the gastrocnemii muscles, which he had received about two months before. The dog which inflicted the wound is now in perfect health, neither had he any appearance of being mad at the time of the accident.

The mercurial friction was made use of, and calomel was given in small doses, and frequently repeated, but without inducing salivation. Blisters were applied to the throat and sternum, and the more powerful stimulants of musk and opium were given in combination, internally, in large doses, without effect.

On the morning of the seventh, it was observed by some of the attendants, who had compelled the patient to take some water, that it produced a sudden and involuntary discharge of urine.

Satisfied of the ill success of the plan I had adopted, and having recently read some facts which were published by Mr. Miller, of S. Carolina, of the wonderful efficacy of sweet oil, in the cure of the bite of the rattle-snake, I was induced to try the effect of a table spoonful. It was taken with difficulty,

but appeared to produce a longer interval between the paroxysms. I repeated the dose, but it was never afterwards followed by the same good effect.

My friend, Dr. Prioleau accompanied me at my last visit, which was at ten o'clock on the morning of the seventh. We were about to administer a dose of laudanum, when the sight of that fluid brought on a paroxym, of which our patient died.

I was forcibly impressed with the suddenness with which the sight of a fluid produced a return of the paroxysms. It also brought to my recollection the circumstance of a mad dog which had been in articulo mortis for some time, and which was killed at once by some water being poured into his mouth.

Does not this seem to show, that persons with hydrophobia, should be distressed as little as possible with the sight of fluids?

Was this a case of idiopathic hydrophobia, or was it rather that the dog was mad at the time of his biting the boy, and afterwards recovered?

Mr. Hay, surgeon in the East India Company's service, at "The Mount," relates the following case: * "At Trichinopoly, in 1805 or 1806, a serjeant of the 94th regiment, was taken ill with every symptom of hydrophobia, and died in the greatest misery, while the dog by which he had been bitten, was alive, and well then, and for a length of time afterwards, with his master, who was an officer of the same regiment. I attended the man with Mr. Tait."

Dr. Bardsley† quotes from the works of Dr. Martin Lister,‡ the following case: A young man was slightly bitten in the arm by his own dog. The animal returned quietly home with him the same evening. The wound healed spontaneously. About forty days after the accident happened, the patient was seized with symptoms precisely analogous to those pro-

* Edin. Med. and Surg. Journal, April, 1817.

† Med. Reports, p. 277.

‡ De Morbis quibusdam Chronicis, Histor. 1.

ceeding from the agency of the canine virus, and on the fourth day he died, strongly convulsed, after making an effort to swallow some beer. The dog remained well at the time of the man's death.

The conclusions to be drawn from the foregoing cases are, 1st, either, that from the circumstance of a temporary passion excited in the dog, a virulent nature was communicated to the saliva, capable of exciting the symptoms resembling those usually proceeding from a rabid animal : or 2d, that the injury done to the nerves by the teeth of the animal occasioned the direful irritation in the system, which certainly bore a very strong resemblance to those caused by the saliva of a rabid animal, and that so commonly end in death. The effect of a general and serious disease in the system, excited by the puncture of a nerve in the extremities, we frequently see, and have cause to lament in the case of traumatic tetanus ; but why, if this explanation be admitted to account for the symptoms in the case of Dr. Glover's, Mr. Hay's, and Dr. Lister's patients, similar symptoms to those of tetanus were not excited, I cannot pretend to say : I think that the first theory is more calculated to account for the occurrences. Had either of the above patients been aware of their having received a bite, or laboured under the apprehension of their complaints having been caused by the canine virus, there could have been no difficulty in accounting for the symptoms, for it is well established, that mere mental irritation, arising from such dread, has several times occasioned symptoms precisely similar to real hydrophobia, and even death (*see appendix*) ; but in the above cases no such impression affected the minds of the sufferers. The cause, therefore, remains to be developed.

APPENDIX.

A striking case, in point, among others, that might be referred to, is noticed in the London Med. and Chirurg. Review, for May 1818. It is taken from *Giornale di Fisica* of Italy, for January and February, 1817. The cause of the symptoms, which were mania, hydrophobia, and rejection of food, was an apprehension of the actual madness of a dog, that bit the person, but which could not be ascertained for some time, owing to the disappearance of the dog: but on the fifth day of the disease, the dog being found, the tranquillity of the person was restored. The editor justly remarks, that had the dog not been found, or his return delayed for some days longer, the man must have fallen a victim. This case proves the propriety of the caution I long since gave, not to kill dogs that bite, but to confine them, in order that it may be seen whether they die or live.

Many other cases, from authors* of undoubted credit, might be quoted, to prove that symptoms perfectly analogous to those excited by the canine virus, have taken place, and even been followed by death, from mere mental irritation, variously conjoined with corporeal affections. Not that any *specific virus* was generated in the system in those cases, and which, by the way, was all that I meant to contend for, when, in my inaugural dissertation, I opposed the old opinion of the spontaneous origin of hydrophobia.

* Dr. Percival, Dr. Bardsley, Dr. Hamilton, and others.

ERRATUM.

In p. 180, last line of the note, for "Dr. Ferriar, and *Med. Hist. and Reflections*," read Dr. Bardsley, of Manchester. See Med. Records, London, 1807. Dr. Ferriar agrees fully as to the impropriety of the term *hydrophobia*, for the reasons I have assigned.

On Dislocation at the Knee Joint. By Thomas Henderson,
M. D. &c. of Georgetown, D. C.

ON the 4th of August, 1813, I was desired by my friend Dr. Withers, to attend and amputate the limb of negro Ned.

This servant was the coachman of colonel Robert Randolph, of Fauquier, Virginia. He had six weeks previous to this date, received a kick from a horse, just above the left patella. The family physician was sent for, who, pronouncing it a fractured limb, applied splints and dressings. The family inform us, that a few days after the accident, two openings appeared on the leg, at its back part, somewhat less than midway between the knee and ankle. These openings continued discharging; the quantity of matter at first small, but increasing rapidly until the day I saw him. He was then labouring under hectic paroxysms, profuse sweats, pulse over 120, no appetite, much emaciated, and so weak as to be almost unable to move his limbs.

The affected limb was enormously enlarged with œdema; discharging great quantities of matter daily, from sinuses which extended high up the thigh; and although but two hours had elapsed since the dressing, on pressure a quantity of matter flowed from the openings; so rapid was the accumulation. On examining these openings, we found the condyles of the os femoris protruding, and blackened with caries.

The exhausted condition of our patient, the great quantity of discharge, the heat of the weather, supposing that if his limb were reduced, he could not possibly survive the formation and discharge of matter from the thigh; the carious state of the end of the thigh bone, and doubting whether the limb could be reduced; all these circumstances determined us to amputate the limb above the knee, as affording the only prospect of saving the man's life.

The operation was accordingly done. Nine arteries were secured. Between the vastus externus and rectus muscles,

there was a large sinus, which extended high up. In examining the course of this sinus, the finger was stopped by the tourniquet. The stump was dressed, the man was in a cool and pleasant apartment, every attention was paid him by his master, and particularly to the cure of the stump, by Dr. Withers, who had the pleasure to see it well in a short time, and the patient completely recovered.

The amputated limb was examined, and the nature of the injury was found, such as we anticipated. *The bones of the leg were completely luxated anteriorly*; the knee joint torn up, ligament, cartilage, and tendon destroyed. The *femur* was projecting about midway, on the posterior part of the leg, with which it had formed adhesions, and the condyles were carious. The fleshy parts presented, from the inflammation consequential to the injury, a confused appearance. I did not compare the length of the two limbs; and in my notes of the case, made a few days after I operated, there is no mention made of it; and I was remiss in not attending to the patella.

REMARKS.

It was not known to the physician who first dressed the limb, and attended it for some weeks, what was really the state of the injured parts. He presumed it a fracture of the thigh bone, and applied splints. He certainly could not have thought of, or sought after, the usual symptoms of a fracture, such as crepitation, &c.; nor regarded the fact that Ned could raise the affected leg, for several days after the injury, without any assistance; which was a pointed evidence against the existence of fracture. The physician first in attendance was not present when I was called in, and I had no interview with him on the subject. We are, therefore, entirely ignorant as to the appearance of the knee joint, immediately after the injury. Perhaps the record of this case, if it produce no other effect, will cause the reader to reflect on the unspeakable importance of attending to the diagnosis of fracture and dislocation.

tion; and yet one would suppose it impossible to mistake such a case as the above.

Whether reduction would have saved the limb, it is impossible to say. I think it probable that it would not, from the structure of the knee joint, and the entire disruption of all its connecting ligaments, &c. The soft parts of the knee joint, when torn or injured, are feeble in their powers of restoration; and when materially injured, are thrown easily into violent, and to the limb, fatal disease. I am, therefore, inclined to believe, that if reduction had been performed at once, the local effects would have been such as to render amputation necessary. We are not enabled to decide from authority, for I believe such a case as that I have given, is not to be found in the records of surgery. I have referred to Benjamin, Charles, and John Bell, to Latta, Pott, Boyer, Hey, Dorsey, Sharp, Larrey, Desault, and Heister. Neither of these authors give a case of *complete anterior* luxation of the bones of the leg at the *knee* joint, nor do they refer to one. I do not recollect that our celebrated countryman, Dr. Physick, mentions such a case in his lectures. Neither is any thing, from experience, said, on this subject, in the work of the no less celebrated, than lamented Dr. Dorsey. Perhaps no digression was ever more abrupt, or welcome to the feelings of the American surgical reader, than the introduction of the following extract from an essay on dislocations, by Mr. Astley Cooper: see Cooper and Travers' Surgical Essays, 1, 49. "Dr. Dorsey, a most intelligent surgeon in America, who, I sincerely hope, may continue his professional career with the same *ardour and good sense*, which he has hitherto manifested," &c. I am, therefore, precise in terms, when I say "no less celebrated, than lamented," in reference to the reputation of the late professor Dorsey.

To return. Boyer says, "it appears impossible that any complete luxation of the tibia, backwards, can take place;" and again, "luxation of the tibia, *forwards*, is still more difficult than that backwards." Boyer quotes a case of complete *lateral* luxation of the tibia, *outward*, from La Motte.

Mr. Hey observes, "the joint of the knee is so firmly supported, on all sides, by tendinous and ligamentous substances, that the bones of the thigh and leg are very rarely separated from each other, so as to form a *dislocation*, in the common sense of that term."

Charles Bell says, "I have lately examined a case, where a young man, caught in the spokes of a carriage, by the leg, while riding behind, had the lower end of the femur separated by diastasis." I presume the examination was a *dissection*.

Desault is silent on this subject.

Benjamin Bell observes, "as luxation of the tibia requires a *very unusual* degree of violence, these bones are seldom forced *entirely past* each other, and the same reason prevents them being often partially separated." Again, "the bones are forced most frequently *backwards*, owing to the greater strength of the flexor tendons."

Mr. Latta says, "this luxation cannot take place without *extreme* violence externally applied ;" and as one valuable feature in his system of surgery is, that he gives cases of the several diseases and injuries, and has none on this luxation, we may suppose he has not met with it.

Since I commenced writing off the above case for publication, I have read Mr. Astley Cooper's valuable paper on dislocations, contained in the 1st vol. of Surgical Essays, by himself, and Mr. Travers. Speaking of partial luxations, he observes, that "the knee, I believe, is rarely luxated any other way," (than partially). If Mr. Cooper had seen such a case, would he not have detailed or mentioned it?

From these references it may fairly be presumed, that neither of those authors has met with a case resembling the one I have detailed : and as no case is referred to by them, I think it reasonable to infer that there is not one on record.

It may be an interesting question to have decided, whether in such a case as I have given, immediate amputation should not be performed ; or whether the subject of my operation was not in a state more likely to recover from amputation, than if done before the constitution is brought into sympathy with the

local affection ; on the principle that the longer amputation is delayed, the better is the prospect of success from the knife. Mr. Boyer, on this subject, remarks, " the question has been discussed, whether amputation is not always proper, immediately after complete luxation of the tibia. We think a prudent surgeon will not perform the operation except in cases where the injury of the knee is so great as to render gangrene of the knee inevitable, and such cases very rarely occur."

Suppose the nature of Ned's case to have been perfectly understood at first ; and in consultation, the following question submitted for decision. Have we not reason, from the nature of this injury, and from the season of the year, to apprehend that gangrene will occur ? In the solution of this question, the result of Heister's reduction of the tibia, from a *complete posterior* dislocation ; and La Motte's success in a *complete lateral* luxation of the tibia, are the only aids that authority gives us. They are, however, sufficient to induce me to delay. Indeed, they are the only two successfully treated cases of reduction which I can find.

The constitution of the injured person will afford some assistance in making up a determination ; nor should the surgeon ever lose sight of the powers of nature in restoration from injuries. I should be much influenced by the situation of the patient, and the prospect of his being faithfully attended to. In camps, where this could not be the case, rest preserved, and exposure prevented ; or in the country, where poverty, or the want of constant medical aid, might affect the chances of recovery : under these circumstances, I would admit the propriety of amputating, where, if such did not obtain, I should be disposed to defer the operation.

If it be true, that the most distinguished surgeons, in the most extensive practice, have never witnessed or recorded such a case, as I have offered ; and this case has occurred to an obscure and inexperienced country surgeon ; it forcibly reminds us of our duty, to observe and record *facts*, though they may be insulated, and seem to lead to no practical conclusion. I have mentioned this case to several professional

gentlemen, and it is at the suggestion of an intelligent and experienced surgeon, that I publish it.

May 29, 1819.

[THE complete dislocation of the tibia anteriorly from the femur, has been considered impossible by several eminent authors. The following account of such a case, taken from the *Journal Complémentaire du Dictionnaire des Sciences Médicales*, tome 1, must be considered as particularly interesting. It is related by M. J. Lavalette. "The accident arose from the falling of a mound of earth on the subject of it, while at work in preparing fortifications. It was nearly extended, and somewhat shortened; and there was a considerable depression above the condyles of the femur: the patella was turned upwards, and horizontally, so that its inferior margin was placed anteriorly, and it lay on the surface of the head of the tibia; and there was fracture of the fibula near its upper extremity. Flexion and extension of the limb could be effected, without being productive of very great pain. It was reduced without much difficulty, and at the end of six weeks the patient had regained the perfect power of motion of the joint; but some degree of weakness of the flexor muscles of the foot remained; and, in walking, the limb was moved in a rotatory manner, describing nearly a circle, which appeared to be owing to rupture of the transverse ligaments of the joints. The power of flexion and extension of the leg on the thigh, observed in this case, will, perhaps, afford the pathognomonic sign between this accident and incomplete dislocation."]

EDITOR.

On Tabes Mesenterica. By Dr. J. Fletcher, of Culpeper County, Virginia.

ALL writers on tabes, have represented it as a disease difficult to cure, and as it is one of frequent occurrence, becomes very necessary that a successful mode of treatment be well understood.

Heretofore, while I treated this disease after the manner of Burns, Underwood, and Cullen, (for in practice they nearly all agree,) I never saved one patient, nor do I recollect a physician that ever did. Chance, however, has suggested a mode of treatment, which, in my hands, has proved as uniformly successful, as emetics, aromatics, and tonics are, when properly administered in the common ague and fever. The treatment is simply this : after removing the cause from which the disease originated, a dose of some cathartic medicine is given every day or every other day, as the case may require, until the tumid and hard belly, fever, &c. disappear : likewise, making use of a tepid bath, fifteen minutes, twice a day, of a very strong decoction* of green black oak bark (*quercus tinctoria*), and clothing the patient well in flannel, if the season of the year demand it. In pursuing this plan eight or ten days, I have always seen an evident amendment, and in six or eight weeks a perfect cure.

The first case that came under my observation, was one that had been treated in the usual manner, by a physician of eminence. It was a child two years old, and had laboured under the complaint for nearly five months : it was reduced to a perfect skeleton, to make use of a common expression ; its thighs were not much larger than a man's thumb, hip bones nearly through the skin, belly prominent and hard, skin there-

* The decoction is made by boiling fifteen pounds of the inside bark of green black oak, in as many gallons of water, till the quantity is reduced one half.

on, sleek and shining, pulse like a thread, and so frequent it was difficult to count, shortness of breath, cough, &c. As it had been sufficiently purged, an immediate resort was had to the decoction of green black oak bark, which performed a perfect cure in two months, unaided by any other remedy whatever. The child is now nearly four years old, enjoying good health, a living monument of the efficacy of the bath. At first when this little patient was bathed, its fingers became clenched, arms and legs contracted, and muscular fibres rigid and firm. These phenomena soon disappeared after removing the child from the bath, and it ceased to have this contractile effect, after being used a few times.

The second case was a girl upwards of ten years old. Nearly all the symptoms of second stage of the complaint were present. Ten or twelve cathartics of calomel, the bath, flannel, and a bitter infusion of chamomile flowers and hops, in her convalescence, removed every vestige of the disease in less than six weeks.

The third case was likewise a girl, belonging to capt. J. Dearing, four years old; had constant fever, pulse very frequent, belly much enlarged and hardened, flesh wasted, &c. &c. About eight cathartics of calomel, the bath, and flannel clothing, without any other remedy, performed a cure in a month and a half. The girl, at this time, has good health.

The fourth, and last case that I shall mention, was a black girl, thirteen years old; she eat dirt to an excess, far advanced in second stage of the disease; belly tumid, hard and painful; constant fever, pulse frequent and tremulous, a number of the glands of her neck much enlarged and indurated, face swollen, and lower extremities dropsical: this patient was diseased for three months. A powder was given three or four times a day, of jalap and super-tartrate of potash, in such doses as produced two or three evacuations from her bowels every twenty-four hours. This plan was persisted in for three weeks or more, until all the violent symptoms were gone; and in her convalescence she took a stomachic bitter of chamomile flowers, hops, and ginger, in the usual quantity. The bath and

flannel were used from the commencement. In two months this patient recovered.

Query. Might we not infer from the last case, that the bath would cure scrofula in the first stage?

I am well aware that when any new remedy is introduced into practice, more virtues are ascribed to it than it really possesses. I am not so vain, or so bigoted, as to believe that I have discovered an infallible remedy for tabes mesenterica; for we frequently see diseases of the most simple nature, prove an out-let to human life, even where the most approved means have been made use of. All that I contend for is, that I never knew it to fail: and on the other hand, that I never knew other means to succeed without it: and should this communication prove the means of saving only one patient from the grave, I shall feel myself fully compensated for the little trouble it has given.

April 15, 1819.

Case of Madame de Onis, late wife of his excellency the Spanish Minister : age 46 years. Communicated by Dr. Henry Hunt, of Washington city.

MADAME DE ONIS arrived in the city of Washington, December 26, 1816. I was requested to visit her next day, when I was informed that she had been indisposed since August, with a cough and pain in the left side, and that she had been under the care of several eminent physicians of Philadelphia, who bled and blistered her repeatedly, applied leeches to her side, and gave her medicines of different kinds, without procuring her much relief. I understood that her disease was pronounced by them to be a rheumatic form of fever. She was taking, by their direction, a solution of carbonate of potash, with a few drops of laudanum, and occasionally draughts of lemonade.

At the time I first saw her, she was much emaciated, and her *pulse depressed*; she complained of sore throat, dyspnoea, and at times, lancinating pains in the *epigastric region*, and left hypochondrium. She could not swallow fluids without much cough, which was so sudden, violent, and convulsive, that I was led to believe, that in the act of swallowing, the epiglottis did not sufficiently close the rima glottides, and that a portion of the fluid was admitted into the chink. I could discover no inflammation in the fauces. 29th. Her bowels being costive, I prescribed a gentle purge. She informed me that all cathartic medicines excited great pain and distress. I insisted on her taking a small dose of rhubarb; and the result was as she had predicted. On the 31st, Dr. Shaaff was called in, to consult with me on her case; he, at first, pronounced it *spasmodic asthma*, but on seeing her swallow fluids, attended with such distressing cough, and observing that the fluid always entered the stomach before the cough commenced, he was disposed to believe that the stomach was idiopathically affected. The patient now got a small dose of magnesia.

which excited much nausea, and increased the cough and pain in her side. Carbonate of soda was afterwards given, which also increased the symptoms, and did not act on her bowels. We were then obliged to resort to injections daily. We tried antimonial preparations, with mucilage, to allay the cough, without effect. Sleep could not be procured without opium.

On the 7th of January, all her symptoms were aggravated, attended with thirst and fever; the difficulty of swallowing fluids was so great, that the smallest quantity would excite cough, so violent, as to threaten suffocation. Blisters were applied to the side, breast, and throat. We gave her, for a few days, calomel, combined with opium, in the evening; and on the 12th, her gums were somewhat inflamed, which was succeeded by a gentle salivation, continuing about twenty days. During this time, her bowels were evacuated daily, by means of injections, and at night one grain of opium was administered. Her pains were very much alleviated, and she was able to swallow, sometimes, a large draught of fluid, before cough was excited. The dyspnœa had vanished, and she was able, by the last of the month, to walk about the room, and take nourishment.

Feb. 1st. Is affected with distressing head-aches; a disease to which she was subject, when in health; but has been absent throughout her illness until the present time. Her catamenial discharge has been irregular in time and quality, and sometimes scarce, sometimes profuse.

Dr. Fernandes, of Norfolk, Virginia, a Portuguese physician, met Dr. Shaaff, and myself, in consultation. He thought that the stomach was affected idiopathically, and the larynx and pharynx symptomatically; and that her pains were rheumatic. He proposed using an *emetic* of James' powder *every morning*; at noon, three pills composed of G. ammon. scam. and aloes, which dose was to be repeated at three o'clock, if the first had not operated on the bowels: at night, the warm bath, and pill of one grain of opium and digitalis. This plan did not meet our approbation. Knowing, however, that the minister reposed much confidence in Dr. F., and believing the

case to be hopeless, we agreed that the plan of Dr. F. should be carried into execution, provided he would attend to the administration of the medicines himself. He, accordingly, remained with the family, and exhibited the medicines he had proposed. The medicines were given five days successively; but creating a great deal of distress, and all the symptoms becoming very much aggravated, they were abandoned; and Dr. F. renounced his opinion, agreeing, *now*, with Dr. Shaaff and myself, that the disease was seated in the larynx. In a written communication to us, the next day, he stated that he considers the disease to be "*a rheumatic, lymphatic, erysipelatous, tracheal angina!*" During the rest of the month she suffered much pain, particularly towards night, in the *epigastric* region, breast, and down the left side and leg. Sometimes she would complain of a violent pain around her breast, as if drawn by a tight cord. Her cough was violent whenever she attempted to swallow fluids; she was frequently distressed with nausea and *sweet* eructations. About the last of the month the catamenia returned. She used liqr. anod. Hoff. and opium, and injections, per anum, daily.

The symptoms, until the 10th of March, varied but little, except that her debility and indisposition to take nourishment were manifestly augmented. From the 10th to the 15th she suffered violently with hysteric cholic, attended with distention of the abdomen, dyspnœa, cough, and distressing pain of the breast, left side, and down the leg. For these affections she took liqr. anod. Hoff. ess. pepperment, and opium; she was also freely rubbed with volatile liniment and laud.; fomentations applied to her abdomen; copious injections thrown into her bowels; and poultices of hops applied to her throat; and all with very little relief.

The bowels were kept free by eating *roasted apples*. During the rest of this month we gave her cicuta and opium; and applications of hop poultices were occasionally made to her throat, without, however, affording her any relief. *Church's cough drops* seemed to give her temporary ease. On the 1st of April, immediately after taking a dose of these drops, she

was seized with violent pain in the stomach and breast ; her respiration became so extremely difficult and suffocating, that she was forced to spring out of bed, and have the windows and door opened to receive fresh air. In this situation I visited her. Her countenance was pale and fallen, and she gasped for breath. She immediately got æther and opium, and fomentations were applied to the epigastric region. Some mitigation of the pain was thus obtained ; but the dyspnœa, and distressing dry cough continued, with some fever. About the middle of the month she began to complain of a pain and soreness of the bowels, attended with an enlargement of the left ovarium. It was about the time she expected the catamenia, and these symptoms were attributed, by her, to that cause. On the 18th, she felt severe pain in the stomach, which nothing but æther could relieve. She devised a plan of taking drink, without producing the cough, by means of lapping it with her tongue. She could also gratify her thirst, which was very great, by holding a lump of ice in the mouth, and swallowing the water as soon as dissolved. During the rest of the month she suffered great pain, particularly in the epigastric region, and left hypochondrium. The paroxysms of pain, during which the abdominal muscles were greatly contracted and indurated, visited her regularly, morning and evening. Recourse was had to æther, liqr. anod. Hoff. camphor. asafœt. in large doses, without advantage ; opium alone soothed her sufferings. She is extremely emaciated ; pulse generally about 90 strokes in a minute, soft and full.

May 12th. The pain and swelling have extended to the left thigh ; her emaciation and debility are extreme ; pulse 80, soft and full. 13th. Abdomen much distended and hard ; swelling extended to the left leg and foot ; great thirst, without the ability to swallow a drop of water. The symptoms gradually increased in violence ; her pains becoming excruciating, her cough excessively violent, notwithstanding that she got opium in large and frequent doses.

On the night of the 21st, I remained with her. She passed it without rest ; cough incessant ; unable to lie down for

fear of suffocation from mucus ; heat and thirst extreme. She could not swallow a drop of water. On the next day, when I visited her, at eleven o'clock, A. M. I found her pulse sunk and extremities cold ; her mind was clear and distinct, although death was stamped on her countenance. She died in a few hours afterwards.

A Case of periodical hæmorrhage from the Urethra of a Male.
 Communicated by J. W. Gloninger, M. D. of Lebanon,
 Pennsylvania.

To the Editor.

SIR,—Perhaps it will not prove uninteresting to the readers of the Medical Recorder, to be informed that the Catamenial Secretion is not altogether characteristic of the female; for it sometimes occurs in the male sex, as is clearly illustrated by the following case.

J. M. small in stature, and of a phlegmatic temperament was, when at the age of seventeen years and five months, attacked with acute pains in the back, and hypogastric region; indigestion, dyspnoea, vertigo, constipation, and a violent pruritus in the course of the urethra, together with some febrile symptoms. From his indisposition, and incapacity to attend to his trade, (which is that of a hatter,) his master was induced to send for his family physician, who, upon his arrival, and investigation into the history of the young man's case, thought it expedient to abstract some blood from his arm, and left a saline cathartic which he directed to be taken in the morning, as his visit was made late in the evening. After the operation of the purgative medicine, he expressed himself much relieved, and his symptoms were still more alleviated upon the discharge of a fluid of a sanguinous appearance from the urethra; which, according to his recollection, did not coagulate on cloths used for its reception.

He has now arrived at the age of thirty-six, and has had, since the first visitation of the discharge, a periodical lunar recurrence.

A Case of Double Hare-lip, operated on by the late Dr. J. Cathrall, of Philadelphia. Communicated by J. Mease, M. D.

THIS case was in a boy about eleven months old ; the upper lip was divided by a double fissure, and the arch of the palate separated for near an inch. The fissures of the lip were separated by a button-like portion, of a round form, terminating considerably above the middle of the division, and projecting further than the end of the nose, with which it formed a continuation. This button was attached to the nose, as well as to the gums of the upper jaw ; and from the left side of the latter a long protuberance projected some distance beyond the right.

Previous to the operation, pressure was employed, as was practised by Desault, not only to press down the bony protuberance of the jaw, but also to enlarge the button-like portion of the upper lip. The operation was performed in the presence of Dr. Miller ; first on the left side, and then on the right. The instruments used were a sharp pointed scalpel, and a wooden gorget. The knife was preferred to the scissors, because these do not often cut keenly, but frequently pinch or bruise, in some degree, the edges of the wound. The twisted suture was employed, and no bandage applied after the operation. There was little or no seam left at the union of the divided portions of the lip. The deficiency in the bony substance within the mouth, improved very much, and the button-like portion of the lip, though brought down with difficulty on a plane with the sides, did not exhibit much deformity.

Fig. 1. Of the annexed plate, represents the lip before the operation. 1 The button-like, or pendulous portion of the upper lip. 2 The projecting part of the gum, and alveolar process. 3 Lower end of the fissure in the gum,

and os maxillare. 4 Upper end of the fissure, at which part the fissure in the jaw and lip, both communicate with the right nostril. 5 Termination of the left fissure of the lip, at which part, however, there is no fissure in the jaw. 6 Left portion of the upper lip. 7 Right portion of the lip, the angle of which falls down under the projecting gum.

Width of the right fissure of the lip, 7-20ths of an inch : size of the button-like portion, width 8-20ths, length $7\frac{1}{2}$ -20ths of an inch : distance, or vacancy between the two lateral portions of the lip, below the button-like portion, *one-half* inch : projection of the jaw at the fissure, 9-20ths of an inch : width of the fissure in the palate, *one-half* inch.

Fig. 2. Represents the appearance of the lip, after the operation.

REVIEWS.

Remarks on a Paper in the New York Hospital Reports, entitled "Reflections on securing in a ligature the Arteria Innominate. To which is added, a case in which the artery was tied by a Surgical Operation. By Valentine Mott, M. D. Professor of Surgery in the University of New York, &c."

To the Editor of the Medical Recorder.

SIR,—If the propriety of medical reviews were not sanctioned by common usage, and also by an experience of their utility, the motives which prompt me to undertake the present one, might be attributed to feelings less worthy than those, by which I profess myself to be actuated. It is fortunate indeed, that the science of medicine is strictly a republic, that each of its votaries has a voice, and that no authority, however high, is placed beyond the reach of individual opinion. On no occasion is this opinion more strongly felt, or more forcibly elicited, than when a novel practice occurs, which is calculated not only to establish principles in the healing art, but also to affect the reputation of a large portion of the medical community. In the two latter points of view, do I consider Dr. Mott's late operation on the arteria innominata. His statement of the case may possibly be considered as a rule of reference by the younger members of the profession, and will,

therefore, establish principles; and this same statement, by coming under the notice of European physicians, will be considered as a specimen of American practice, and will, therefore, affect the reputation of a large portion of the medical community. On these accounts, it behooves every well wisher to the surgical reputation of our country, to investigate calmly and dispassionately, how far this operation, performed by a professor of surgery, deserves either the censure or the approbation of our profession.

The zeal and spirit which prompt a man to depart from the common routine of practice, in order to save a patient, are highly commendable; without them, few or no improvements could take place. But in this departure, let us be perfectly certain, that we view the disease correctly; that its diagnostics are well established; because, without these preliminaries, common cases of sickness, the treatment of which is well established by experience, may be mistaken for very unusual maladies, and the treatment will be consequently hazardous. A very able review of Dr. Mott's case appeared in your January number, in which the writer, judging by the statement published by Dr. Mott, expresses his doubt of the diagnostics of aneurism having been sufficiently made out, to justify so serious an operation as that of taking up the arteria innominata. This writer informs us that his doubts originated from never having seen aneurism attended with such symptoms, and from no notice being taken of the subclavian artery on dissection, which could induce him to believe that it was or had been in a state of aneurismal dilatation. We regret that Dr. Mott has not replied to these objections, and elucidated the unsatisfactory parts of his narrative, which induced this reviewer to call in question the propriety of the treatment of this case. We conceive that a writer, under the foregoing circumstances, is bound to give an explanation to that public, before which he appears as an instructor, or else must be laid aside as a publisher of strange cases, whose statements do not deserve attention. We have heard that Dr. Mott expresses the utmost contempt for this reviewer; he considers him

young and inexperienced, also, very envious, and, that it would be degrading to notice his remarks by a public defence. In spite, however, of the doctor's persuasion of his antagonist being so very humble, he has condescended to sanction a very abusive and irrelative reply, (published in pamphlet form at New York) to the review, written, as we are informed, by one of his students. This conduct so far from satisfying me with the case, the respectability of which I was disposed to doubt on a first perusal, induced me to give it two or three more perusals, in order to examine it more carefully, and my objections have increased with the attention I bestowed. But as the points of difference between the doctor and myself are numerous, I shall say as little as possible on my own authority, resting principally on a comparison between the opinions of S. Cooper, Boyer, Hunter, &c. and of Dr. Mott.

The subject of this operation was a seaman, aged 57, who, from a fall on the right arm and shoulder, became disabled from doing his ship-duty. He was admitted into the New York hospital a week afterwards, on March 1st, 1818, for a catarrhal affection, having, at the same time, his shoulder, arm, and side of the neck much swollen. In three weeks he was nearly cured of his catarrh, and swollen shoulder and arm, but as the swelling and inflammation of the superior extremity subsided, a tumefaction above, and superior to the clavicle, at first involved in the general swelling, and not to be distinguished from it, began to show itself.

Dr. Mott tells us, "that for some time after the general swelling had subsided, leaving the tumour distinct and circumscribed, no circumstance occurred which gave rise to a suspicion of its being aneurismal. The enlargement was thought to be a common indolent tumour, and was repeatedly blistered with a view to discuss it. The tumour gradually diminished under this treatment, though a considerable time elapsed before any striking change took place."

So far the doctor seems to have thought rightly, for we are told, that "when once an aneurismal tumour has originated, it continually grows larger." *S. Cooper.*

“At length a faint and obscure pulsation was perceived; still it was a matter of doubt whether the tumour was aneurismal, or whether the pulsatory motion was communicated to it by the subclavian artery, immediately over which it was situated. From its firm unyielding nature upon pressure, the latter was considered as the most probable, and the blisters were continued as before.”

So far the doctor is right, for we are told “the first thing the patient perceives, is an extraordinary throbbing in some particular situation, and on paying a little more attention, he discovers there a small pulsating tumour. This tumour entirely disappears when compressed, but returns again as soon as the pressure is removed.” *Cooper.*

The patient remained in this state for several days, without any marked change, either in his feelings, or the appearance of the tumour.

“On the 3d of May, at 6 o'clock in the afternoon, the patient complained that he felt something give way in the tumour, that his shoulder was very painful, and that he was able to raise it only a few inches from his side. The tumour at this time suddenly increased about one third, and a pulsation was distinctly perceptible. Its most prominent part was below the clavicle, at which place the pulsation was most distinct. The portion above the clavicle was also much enlarged; it still, however, had its usual firmness, except in one point near its centre.”

“May 4th. The tumour is evidently increased, that portion of it more particularly, which is below the clavicle. It is not so firm and resisting as it has been. Pulsation is not so distinct as yesterday, but appears to be more diffused.”

“May 5th and 6th. The tumour is still progressing, and the pain in the shoulder is also more severe.”

Let us compare these four last paragraphs with what Boyer says. “In consequence of some effort, more or less violent, the tumour acquires in a few weeks a volume double or triple of that to which it had arrived in several months. Sometimes the patient can perceive the moment when the rupture of the

proper tunics of the artery happens, either by a sensation of tearing in the seat of the tumour, or a noise similar to that caused by tearing cloth. The tumour is then less circumscribed; its limits are less distinct; it becomes hard and often uneven; compression does not entirely make it disappear; that of the artery produces but a slight diminution of its volume; the beatings become more and more obscure, and change to a trembling, difficult to distinguish, and in some rare cases entirely imperceptible: at the same time, pains are felt in the tumour, and the limb, above and below the seat of the disease, becomes enlarged. The œdema keeps pace with the aneurism, and motion becomes extremely painful and difficult. When the tumour has arrived at the highest degree of development, the member is not only very much swollen, but becomes numb and cold. The superficial veins are dilated and varicose; the centre of the tumour rises to a point; the skin that covers it becomes red and brown; it is extremely distended, and becomes thinner daily; a gangrenous point appears in the middle of this inflammation, the eschar is detached as soon as formed, and the patient perishes in a few instants by hemorrhage." *Boyer*, vol. i. p. 259.

May 7th. Dr. Mott called a consultation of his colleagues, and stated to them, that he wished to take up the subclavian artery, before it passes the scaleni muscles, or else the arteria innominata. This they consented to.

May 8th, 9th, and 10th. The tumour is acknowledged by all to be increasing, and the operation is determined on for tomorrow.

In reviewing this almost literal transcript of Dr. M.'s paper, what diagnostic is there of aneurism? The pulsation, when first observed, even by the Dr.'s own admission, did not seem to warrant the conclusion of aneurism. The fact, that tumours, when situated in the course of large arteries, acquire a pulsatory motion, is well known, and is frequently referred to; thus Mr. Hunter says, "tumours over large arteries have a considerable motion given to them, and have often been supposed to be aneurisms." Again, we are informed, that on

the 3d of May, the patient "felt something give way in the tumour, that the tumour suddenly increased about one third, having its most prominent part, and most distinct pulsation below the clavicle; and that the tumour increased till the 7th, when an operation was determined on." We have then, in this sentence, the symptoms which determined Dr. Mott to take up the artery, supplying the part: that the sensation of something giving way, might arise from the bursting of an abscess, no one can doubt: but how are we to account for the increase of the tumour? It also probably arose from an increased suppuration, because if this sudden and progressive increase of the tumour had proceeded from the blood of a ruptured artery, the skin would have presented, in all probability, a brown or purple colour.*

It is stated that the arm of this patient recovered from its swelling while the tumour on his neck was increasing; now this appears exactly contrary to what is usually observed, for the "œdema keeps pace with the aneurism, and when the tumour has arrived at the highest degree of development, the member is not only very much swollen, but becomes numb and cold." *Boyer.*

May 11th. The day of operation: "no difference can be perceived in the pulsation of the arteries in the two extremities; his pulses are uniform and regular, each beating 69 in a minute."

S. Cooper says, that "in proportion as the aneurismal sac grows larger, the communication of blood beyond the tumour is lessened. Hence, in this state, the pulse below the swelling becomes weak and small."

Dr. Mott next furnishes us with an account of his operation; in this there seems to have been a most terrific extent, and, at the same time, unnecessary minuteness of dissection;

* The former reviewer who investigated, with the hand of a master, this operation, seems to be very fully satisfied that the sensation of "something giving way," proceeded from the rupture of an abscess; and he considers this opinion as confirmed by the fact, that several lymphatic glands were found in a state of scrophulous suppuration in this part.

layer after layer being peeled off, as if there was no such thing in the animal œconomy as mortification in parts, from detaching them from their natural connexions. As regards extent of incision, we have never seen the arteria innominata or the subclavian artery so situated that a simple longitudinal cut did not expose them sufficiently for the application of a ligature. And as regards minuteness of dissection, when we are told that the skin was first dissected up, then the sterno-cleido mastoideus and the platisma myoides, afterwards the sterno-hyoideus and sterno-thyroideus muscles; and if to this we add that the carotid artery was separated from its sheath, and pulled one way, while the par vagum and internal jugular were served in the same manner, and pulled another; that the subclavian artery was denuded half an inch, and the arteria innominata much more; we are utterly at a loss to conceive how a practitioner (boasting of his being capable of "the noblest efforts of scientific surgery") could calculate on any result but sloughing and ulceration.

An established rule in the application of ligatures to arteries, is, that "the vessel should be detached from its connexions, only to such an extent as is necessary for the passage of the ligature underneath it;" for, "the blood vessels being organized like other living parts, the healing of a wounded artery can only take place favourably, when that part of the vessel, which is immediately contiguous to the ligature, continues to receive a due supply of blood through its vasa vasorum, which are ramifications of the collateral arteries." *J. Cooper.*

Besides these objections to the mode of operating, there appears to be a want of accuracy and precision in the anatomical ideas of the operator. Thus we read, that "after fairly denuding the artery, viz. (the arteria innominata), upon its upper surface, I very cautiously, with the handle of a scalpel, separated the cellular substance from the sides of it, so as to avoid wounding the pleura. The recurrent and phrenic nerves were not disturbed in this part of the operation." This self-commendation at not wounding the pleura, and at not disturb-

ing the phrenic nerve, puts me in mind of a man who would rejoice in extracting a cataract, at not having cut off his patient's nose, for they are nearly equidistant from the seat of operation. What is still more surprising in the doctor's account is, that while he is congratulating himself for not wounding parts which were in no danger, he does not allude once to the hazard in which were placed the common trunk of the left subclavian and jugular veins, (known here by the name of the transverse vein) and the common trunk of the right subclavian and jugular veins.

This operation lasted one hour, and after the division, subdivision, pulling and bruising of these delicate parts, during all that time, we find the doctor putting on a dressing as if he expected them to heal by the first intention ; for to use his own words, " the parts were now brought into co-aptation, and the integuments drawn together by *three* interrupted sutures, and straps of adhesive plaster, a little lint, and additional straps completed the dressings." Thus was an excellent foundation laid for the formation of an abscess by the confinement of matter, and for the subsequent catastrophe. Let us see what followed ; on the fifth day after the operation, when the dressings were removed, the " suppuration was found to be considerable, and the extremities of the two incisions were united as far as the sutures, each about one inch in extent." The close dressing was renewed. On the sixth day, suppuration more considerable on removing the dressings. Small sloughs perceptible on the ends of the divided muscles ; granulation commencing. Close dressing renewed.

Seventh day. Suppuration considerable, wound stopped up again.

Eighth day. Suppuration still more profuse, attended with considerable fætor ; small portions of the sloughs removed at each dressing. Notwithstanding the fætor and the sloughs, the doctor says " the appearance of the wound was every way favourable."

On the ninth, the doctor reports the wound as contracted in size, and perfectly healthy, with two exceptions, which al-

most any other person would have considered very important; the first is, that there is a small slough in the deepest part of the wound; the second, that an unexpected and unaccountable hemorrhage took place, which suddenly filled the cavity of the wound.

It is unnecessary to follow the reports from day to day. On the eighteenth, the patient's strength continues to improve, and every symptom continues highly flattering. The operation is considered by all on the twenty-first day, to have been completely successful, for the patient has walked down two pair of stairs, and several times across the yard.

On the 23d day, however, the patient bled from the wound to the amount of 24 ounces, and more or less on successive days till the 26th, when he died.

The appearances on examination, 18 hours after death, were as follows. The wound in the neck was "about one third its original size:" as the two original incisions were three inches each in length, the wound in the neck was therefore two inches long. The ulcer at the bottom was more than twice the size of the wound in the neck; it was consequently more than four inches long. Into this ulcer the carotid, subclavian, and innominata arteries opened, considerable portions of them having been dissolved and carried away by the ulceration. Was not this ulceration of the vessels, the necessary consequence of the extensive separation of them from their natural connections during the operation; and perhaps of cutting off the supply of blood to the coats of the vessels through the vasa arteriarum? Did not the progress of the main body of the ulcer depend on the nature and position of the parts in which the wound was inflicted? Are we sure that injuries, particularly such extensive ones, done in the superior mediastinum, can be recovered from, even in the healthiest constitutions? The late James Bayard, Esq. I am informed, died from an abscess situated in this very part; he had a remarkable strength of constitution. But admitting that simple incisions into the part may be recovered from, by union by the first intention, or by the adhesive inflammation, it was not

reasonable to suppose that either of those modes of union could take place, when the wound was kept open for an hour, and the parts dissected and torn from each other with as much deliberation as is used in a dissecting room. These happy modes of restoration being, therefore, forbidden by the very manner in which Dr. Mott conducted his operation, it appears to me a great error to have closed up the wound, as if union by the first intention was to be looked for, instead of profuse suppuration and extensive sloughing.

There are to us not a few contradictions in the account of the appearances, on the examination of the parts after death. Thus we are informed in one place, that "the arch of the aorta, and the origin of the innominata being fairly exposed, not a vestige of inflammation or its consequences could be discovered, either upon them, the lungs, or the pleura at any part." We are told afterwards, that the upper extremity of the innominata was considerably diminished in its diameter, by the thickened state of its coats, occasioned by the *surrounding inflammation*. That the upper surface of the pleura was very much thickened by the *adhesive inflammation* which preceded the ulcerative, in order to protect the cavity of the thorax.

Again, after speaking of the condition of the *innominata at its upper extremity*, we are told, that the tripod of great vessels consisting of the *innominata*, subclavian, and carotid arteries, to the extent of nearly an inch, was dissolved and carried away by the ulceration.

We are also told in the report of the eighth day, that the *pulsation* of the radial artery of the right arm was to be felt occasionally *pretty distinct*. On the eleventh day the pulsation is also *pretty distinct*. On the fourteenth day, the pulsation of the radial artery is *more distinct than heretofore*. After announcing three times in this formal manner, the pulsation of the right radial artery, towards the conclusion of the paper we are informed, that, "although at *no time* could all be satisfied that a pulsation was perceptible in the radial artery, yet, many at times were of opinion, that an occasional undulatory motion was very evident."

As in every case of aneurism, the appearances of the diseased parts, after death, are of an unequivocal nature, and pretty uniformly the same, it was to be expected that as the symptoms which satisfied Dr. Mott of the existence of this disease, differed from those recorded by other writers on surgery, he at least would have elucidated this subject, and secured his own character by the dissection. His report is as follows:—

“1st. The subclavian artery, internally and externally, to the disease, was pervious. The brachial, and other arteries of the right arm, were of their common diameter, and in every respect natural.”

S. Cooper tells us, that on dissection, the lower continuation of the artery is found preternaturally small and contracted.

“Upon opening into the tumour, which now gave, (from its small size,) no deformity to the shoulder, the clavicle was involved in it, and found carious and entirely disunited about the middle. A number of lymphatic glands under the clavicles, and particularly the left, were considerably enlarged, and when cut into, very soft, and evidently in a state of scrophulous suppuration. *No other morbid appearances were observed.*”

How very unsatisfactory is this account. In all dissections of aneurismal tumours which have reached the size that Dr. Mott speaks of, we are told particularly of the state of the coats of the artery, whether the aneurism proceeded from a general distention, or from a rupture of the artery on one side only (the aneurismal tumour being formed of its cellular investment).

The clotted blood and laminated coagulating lymph which fills up the aneurismal sac, seems indispensable also to the description. But Dr. Mott says, none of those morbid appearances were observed in his case. Boyer says “that the neighbouring muscles, whether they cover the aneurism, or laterally surround it, are distended, displaced, thinned, and sometimes confounded with the adjacent parts. It is the same with the considerable nervous chords near the tumour, which

are displaced, thinned, and sometimes adherent to the aneurismal sac, and so diseased as not to be known." Yet Dr. Mott says none of these morbid appearances were observed in his case.

What are we to think of all this? Is it possible that an aneurism, measuring five inches in one diameter, four in another, and two or three inches thick, can exist without any of its legitimate symptoms, being present in life, or any of its appearances and morbid effects, remaining after death?

After the foregoing remarks, Dr. Mott accounts for the manner in which the supply of blood, to the right arm, was kept up after the operation. He refers it to "the inosculation of the epigastric with the internal mammary artery of the intercostals with the thoracics, of the infrascapular and other arteries of the axilla, more or less with small branches of the intercostals; as also, of the occipital with small ascending branches of the subclavian." Now, the greater part of this seems to be far-fetched, and a gratuitous assertion, as excepting the epigastric and internal mammary arteries; these vessels have but little intercourse with each other. The route of blood in this case was, in all probability, through the left carotid and vertebral arteries, into the circle of Willis; and from that through the right vertebral artery, into the arm, as the "right subclavian remained pervious." This opinion is confirmed by the doctor's own statement, for we find even on the first day of the operation, the left carotid artery indicating the passage of a greater column of blood than usual.

This case is concluded by Dr. Mott expressing "his happiness in the reflection, as it is the only time this operation has been performed, that it is the bearer of a message to surgery, containing new and important results." This message, as yet, does very little honour to Dr. Mott's character as a surgeon, and I hope that it will be a warning, to the profession, never to allow the brilliancy of an operation to make one forget the propriety, and, indeed, humanity of investigating the nature of the disease for which it is to be performed.

I remain yours,

most respectfully.

H.

PARRY ON THE PULSE.

DR. C. H. PARRY's work on the arterial pulse, is a very able performance, and we think we may venture to assert, without endangering a charge of unqualified encomium, that there are few works of similar extent to be met with, which contain more of either novel or useful information. His experiments are numerous, happily conceived, and appear to have been fairly conducted. The work being now in pretty general circulation, it is presumed that every physician having a taste for physiology, will lose no time in procuring it. A statement of its merits, and of its several objects, would have been given in this place, did we not believe that every one desirous of information on the principles of the circulation, and more especially on the pulse, would prefer consulting the book itself.

As a specimen of Dr. Parry's manner of prosecuting his subject, the following account is offered; and the subjoined reflections, which we have taken the liberty of introducing, will not, we hope, be deemed improper:—

In the tabular statement, belonging to the doctor's twenty-seventh experiment, it appears, in an ewe bled to death, from the left jugular vein, that the three first bleedings, in which twenty-five ounces were taken away, diminished both the frequency and the strength of the pulse; also, the number of respirations in a minute; but, in the subsequent subtractions of blood, by which the animal sustained the loss of thirty-two ounces more, the pulse increased in number, so that just before death, it beat forty-four times oftener than in the commencement of the experiment; it also became apparently stronger, and acquired a jerking action.

The number of respirations, per minute, was in the course of the experiment, reduced from twenty-four to sixteen.

The circumference of the right carotid artery, at first, by the loss of blood, was lessened from $\frac{222}{400}$ of an inch, to $\frac{127}{400}$;

afterwards it gradually resumed its size again, so that at the time of death it measured $\frac{169}{400}$ of an inch.

From this experiment, many practical, as well as physiological deductions may be made. In fevers, more especially, in their paroxysms, the respiration is much increased : if successive abstractions of blood out of the circulation, have the effect of directly diminishing the number of respirations, would it not be just to infer, that the morbid frequency of this function in fevers, and in other diseases, was owing to too much blood, and that in such cases the just indication would require venesection.

If Dr. Parry has made no error in this statement, and if a diminished respiration should be found uniformly to follow a diminution of the mass of blood ; a preternaturally increased state of that function might be converted into a very correct, and useful criterion, by which to judge of the necessity of bleeding in diseases. We are the more inclined to credit this observation of Dr. Parry, since, from reflection on connecting circumstances, it appears reasonable that it should be as he states. One of the designs of respiration is, to preserve the necessary connection and relation between the lesser and greater circulation ; if, therefore, in the latter, the quantity of blood be in excess, the actions of the pulmonary organs would have to be increased, in order that there should occur no interruption to the general circulation ; and vice versa, when the quantity of blood is diminished ; it would not be necessary that the expansion of the lungs should be so frequent, or so deep, the lessened volume of the blood passing the pulmonary circulation with more ease.

It is not to be supposed that bleeding, either local or from the system, is either necessary or proper in all instances of fever, attended with quick respiration, as the action of the lungs may often be increased to a degree proportionate to the velocity of the greater circulation. But this consonance of function must not always be looked for, and then the oppressed and labouring pulmonary organs will be required to be relieved, by venesection from the arm, or by the application of

cupping glasses about the chest. By this means, a freedom of circulation would be produced, and much serious, or fatal, obstruction in the different organs connected with the general circulation, would be prevented.

What the author states in relation to the pulse increasing in frequency, and apparently in force, from the obstruction of blood, is reasonable enough, and corresponds with facts observed by others. As the column of blood would be decreased, so would the resistance to the heart's action be lessened, and the left ventricle, of course, would, for a while, act with increased activity ; in the same proportion give an increased velocity to the circulation. Saumarez, in his physiological work, states, that for some time before the ox perishes in the slaughter-house, from bleeding, the velocity of his circulation is increased. The late Dr. Wistar, a short time previous to his death, related to us an anecdote, tending not only to confirm this principle, but to show that it is not easy, at all times, to distinguish apparent, from real force, in the pulse. While prosecuting his professional studies at the university of Edinburgh, he was concerned in the performance of some experiments on transfusion, a subject, which at that day, considerably occupied the minds of medical characters, in many parts of Europe. At a time when one of these experiments was instituting, a gentleman of éminence, then a lecturer in Edinburgh, we think he said a Dr. Aikin, unexpectedly came in to observe what was going on. The dog had just been nearly emptied of his blood ; Wistar, and the rest of his fellow students present, agreed to conceal this circumstance from their visitor, and to enquire from him, for their own diversion, what was the state of the animal's circulation. The question being put, the doctor stepped up, drew his glove, and with an air of solemnity, placed his hand on the thorax, and after a short examination of the actions of the heart, declared the dog to be *in a high sthenic state*.

It is, perhaps, from the same cause, that the frequent pulse is produced, which we observe in the different species of typhus, or low state of fever. In such cases, does not the rein-

statement of the standard or natural pulse, and the consequent recovery of health, depend, in a great measure, on the renovation of the hitherto diminished and impoverished circulating mass, by the means commonly employed, viz. stimulants, and nutrition, as the bulk of the sanguineous column having again been increased, it tends, by its increased resistance, to lessen, and to render more natural, the quick and irregular contractions of the heart. The jerking, bounding, and seemingly strong pulse, occasionally remarked in those fevers, we have now the authority of experiment for not regarding as indications of real strength ; and, therefore, in justice, can give rise to no opposition to the views submitted. The fact of the acceleration of the pulse, by the evacuation of blood, practitioners have long since been sensible of, and which Dr. Parry has now proved by experiment, is susceptible of an extensive application to the theory, and treatment of fevers in general. It suggests to us, in the first place, the principle that a well regulated or healthful excitation, depends on a certain just correspondence between the resisting force of the circulating mass, and the contractile energy of the blood vessels.

The preservation of this balance of power between the containing and the contained, or the vessels and their fluids, depends on the due operation of the agents of health, and on the preservation of the proper relations of the vital power. The causes of fever operate by affecting partially either the one or the other of these conditions ; and the morbid result is a preponderance of either, depending on the nature or operation of the noxious causes. To trace this principle through its whole extent, to mark its tendency to elucidate the nature of fevers, and to point out the bearing it would have on medical practice, would form an enquiry of great extent. We are, therefore, from want of time, and other considerations, compelled in this place to drop the subject.

Practical Illustration of the Progress of Medical Improvement, for the last thirty years; or Histories of Cases of Acute Diseases, treated according to the Principles of the Doctrine of Excitation, &c. By Charles Maclean, M. D. London, 1818.

WERE we to take this work for what it pretends to be, "A Practical Illustration of the progress of Medical Science, for the last thirty years," we should form no very flattering opinion of the present state of medicine. So far, indeed, from holding it as an illustration of the progress of medicine, we are of opinion that, within the period specified, few works have appeared detailing a practice more objectionable, or sentiments more extravagant and unphilosophical than those contained in the book before us.

As far as concerns stimulating in the cure of diseases, this work may be regarded as a practical illustration of the principles of Dr. Brown. Perhaps it would be speaking more correctly, to say that it is an unwarrantable extension of the theory of debility; for, Dr. Brown did admit of evacuation in some cases, a practice which Dr. Maclean rejects *in toto*.

In contending that there are but three diseases, (sthenic, asthenic, and local,) the author of the *Elementa Medicinæ* has often been reproached with having attempted a forced, and an unnatural, simplification in pathological science; but Dr. M. has far exceeded him in this respect, by asserting that, in nature there is to be found but *one* disease, and that consisting of deficient excitement.

This bold and extravagant position, at once leads us to an indiscriminate course of stimulation in every species of disease. Accordingly, we find Dr. Maclean treating typhus and synocha, local inflammation and evident debility, by stimulants, only varying their force according to the degree of deficient action, conceived to exist in each particular affection.

Daily observation induces us to doubt the correctness of this practice. In temperate and northern climates, where diseases usually take on a vigorous inflammatory action, to drench the sick, as our author does, with the most active stimulants, could not but occasion the most serious consequences. Even in the hot latitude of the East and West Indies, we should not be surprised if some fatal application of this wild practice of "excitation" had been made. That this has been the case, the thirty-second case detailed in the work before us has served, not a little, to excite our suspicions. The case presented well marked symptoms of abdominal inflammation, more particularly of the bladder and intestines, in which, though general depletion may have been forbidden by the apparent weakness of the patient, yet, it is presumable from common experience on the subject, that leeching or cupping the integuments of the abdomen, sudorifics, and some other articles of the mild evacuant class, would have been useful. But Dr. Robertson, who appears to have been a zealous proselyte to Dr. Maclean's practice and principles, thought proper to begin the treatment, by directing a draught three times a day, with fifty drops of tinct. opii in each, and a starch glyster, with a hundred drops of laudanum, two or three times a day. In draughts and glysters, there was expended in this case near half a pound of laudanum, besides other stimulants; and in eight days from the commencement of this process of "excitation," the patient died comatose.

The unhappy termination of the disease, and a statement of the appearances of the body on dissection, will furnish a serious commentary on this practice. "The whole of the intestines, (says Dr. R.) were found in a state of inflammation, *tending to gangrene*. The liver and other abdominal viscera were sound, excepting the omentum and top of the bladder, which were a little inflamed; not a drop of fluid was found in the pericardium; on the surface of the heart were several incrustations of a cretaceous appearance, and the coats of the auricles and larger blood vessels were remarkably thin and inelastic."

Dr. Maclean is as fanciful on the *modus operandi* of his medicines, and as opposite in his sentiments, from the general impressions on the subject, as his practice appears objectionable. He holds an opinion, which he conceives to be demonstrated by observation and experience ; that those effects, usually considered as produced by the immediate action of medicinal agents, are only consequences of a state of indirect debility. For instance, the salivation arising from the exhibition of mercury, and the purging that ensues on the use of calomel and jalap, are effects not to be attributed to the direct action of those remedies, but must be imputed to a weakness, caused by the organs particularly affected having been previously too much excited. In support of this hypothesis, the doctor alleges, that the effects mentioned would not have taken place, had the use of the mercury, and of the calomel and jalap, been regularly persisted in, so as to keep up the excitement of the whole body, and duly invigorate each particular part.

The following short quotation will exhibit his particular opinions on this subject. A "salivation, or, in cases of local disease where salivation cannot be produced, a discharge of blood from the mouth and fauces, does not take place while the mercury is *regularly taken*, but when it is either *suddenly laid aside*, or given at improper intervals." Powders of ten grains of calomel and fifteen of jalap, were ordered in one case to be taken *every hour*. After taking three powders in the course of the day, the patient was excessively purged and griped through the night. "This, (says Dr. Maclean,) is one of the many facts that prove purging to be the effect of a state of indirect debility, occasioned by the improper subduction of stimulant powers. Had the powders been regularly repeated during the night, the purging and griping would not have taken place !" Hence, it would follow from this mode of reasoning, that to prevent or cure a salivation, when it does take place, the *mercury must be more freely administered*; and to prevent calomel and jalap from purging, it must be frequently repeated and persisted in !!! Dr. M. best knows what his

own experience has been, but we venture to affirm, that the observation of almost every physician is opposed to him on this point; and we view the idea not only as contrary to daily remark, but as inconsistent with reason. We could as soon believe, that an effect might be lessened and removed, by directly increasing the operation of its cause, as to yield the slightest credit to our author's opinion on this point. Want of time will not admit of us going further into the consideration of Dr. Maclean's book; we must, therefore, conclude by observing, that, however correctly he may conceive it to be adapted to the diseases of India, where it is well known that indirect debility so soon, and so generally supervenes to almost all diseases; in the cool, or more temperate climate of the United States, it would prove a most dangerous guide to practice.

Practical Observations on the Nature and Treatment of Marasmus, and of the Disorders allied to it; which may be strictly denominated bilious. By Joseph Ayre, M. D. Member of the Royal Medical Society of Edinburgh, and one of the Physicians of the General Infirmary at Hull. London, 1818. 8vo. p. 256.

WE have seldom read a book that has afforded us more satisfaction than the one before us. It is replete with valuable practical precepts; and although we cannot give into all the author's speculative notions, upon the subject he treats, we consider them, upon the whole, as possessing considerable merit. The work is divided into two parts; the first includes the history and treatment of the disease, which forms the principal subject of the work; and in the second, cases and observations are given, illustrative of the opinions and practice laid down in the first part.

Marasmus; under this name the author describes a disease which has, by different writers, been denominated, "febris hectica infantum,"* "infantile remittent,"† "chronic weakness of children,"‡ "worm fever," &c. This disease, which has hitherto been regarded as peculiar to children and infants, is not so in fact, according to the author, and does not differ essentially from that disorder of adults, which may be strictly denominated bilious, either in the nature or in the causes, or in the means of cure. There are two forms of this disease, the chronic and inflammatory. The chronic is distinguished by "a morbidly craving appetite, unaccompanied by much thirst or fever; whilst the acute one is attended by a considerable loss, or by an absolute extinction of the appetite, with a considerable degree of both thirst and fever."

The following accurate descriptions are given of these two forms of the disease:—

* Sydenham.

† Butler.

‡ Withers.

“ A young infant, when first affected with this complaint, exhibits a languid appearance, sleeping more than usual during the day, and passing the night with a proportionable degree of restlessness. It takes, with more than usual readiness, its food, which appears to have the temporary effect of soothing it. After a longer or shorter time, according, generally, to the age of the infant, the restlessness and crying increase, a loathing of the food succeeds the former appetite ; the breathing, towards evening, becomes quicker and louder than usual, attended with some stupor, and frequent startings, and considerable heat about the body, the feet and hands being cold. If the little patient be not quickly relieved from this state, a low degree of convulsion appears, which nurses term inward fits, and in which the countenance becomes sunken, and of a dark hue, especially about the mouth ; these symptoms terminating, at length, in the strong and more fatal convulsion. If the infant be a few months old when attacked, or of a vigorous constitution, its bowels will sometimes become spontaneously loose, immediately after the complaint appears, and under these circumstances, its craving appetite may continue, with occasional interruptions, for many weeks, without any considerable aggravation of the complaint ; the alvine discharges varying almost daily in their appearance, but never appearing natural, being sometimes of a yellowish green, and curdy, or parti-coloured ; or, as nurses term it, of all colours, and slimy : and at other times, of a yeasty colour, and in this case, often of a peculiarly offensive and unnatural odour. The flesh acquires a flabby or loose feel, and wastes more or less quickly in proportion to the urgency of the symptoms. The tongue is white, and not unfrequently aphthous. A troublesome spasmodic cough coming on in the evening, and recurring at intervals during the night, is not an uncommon symptom, attended by difficulty in the breathing, especially during sleep, from an apparent, and sometimes from an actual accumulation of phlegm in the throat, giving rise to that state, which nurses term, being stuffed. Eruptions occasionally break out about the nose, or mouth and ears, and sometimes a

rash appears about the body, and in the latter case, often with a temporary relief to some urgent symptoms.

“ After some time, the spontaneous looseness, which had hitherto carried off a portion of the imperfectly digested and irritating matters from the bowels, and thus, in some degree, averted the danger of considerable febrile reaction, becomes less available ; for though, perhaps, in appearance, more considerable than before, yet it is more unnatural in its colour, and less productive, there being much straining, with scarcely any thing but slime, or watery stools, discharged. The craving appetite now yields to the opposite, a considerable increase of fever ensues, with only slight morning remissions, attended by restlessness, with intervals of stupor, that terminate in convulsions. The fever, after some time, is often unexpectedly relieved by a return of the spontaneous and more productive looseness, which carrying off the irritating matters from the bowels, relieves the system, and sometimes restores the morbidly craving appetite. The relief thus afforded is, however, only of a partial kind, for the wasting of the flesh and strength proceeds, notwithstanding the renewal of the appetite ; the infant dying, at length, in a state of extreme emaciation and weakness, discharging the food from the stomach and bowels, during the last few days of its life, in a most offensive and putrid state.”

The chronic stage of this disorder in children, makes its approach in a way more insidiously. At first there is little more observed than a craving appetite for food, which is rarely mistaken for a fuller indication of health.

“ In a short time the countenance begins to loose something of its natural animation and blooming look ; the child is reluctant to rise at his usual hour in the morning, and when he has risen, is importunate to be nursed, or is desirous of sitting still near the fire, abandoning those active amusements in which he before delighted. He complains of being chilly and tired, and of having an aching pain principally in the knees and lower part of the thighs, and which is worst when first sitting down after walking. He is dull, fretful, and readily weeps from

causes that he would formerly have disregarded. The breath is fœtid, and there is commonly an itching about the nose, and an increased mucous discharge from it, along with a slight pain or dizziness in the head, and sometimes an uneasiness in the stomach or bowels. As the afternoon approaches, the child appears more languid, and is desirous of going to bed early. He falls asleep readily, and sleeps more soundly through the night than usual. The tongue is white before the breakfast is taken, and the bowels are either regular or loose, the discharge being scanty, and rather unnatural in its appearance.

“As the disorder advances, there is a disposition in the patient to faint, and he is inclined to sleep during the afternoon, becoming watchful for the first few hours of the night. When asleep, he often perspires about the head and neck, and moans or talks, or grinds his teeth, and sometimes starts, awaking suddenly from fear inspired by his dreams. A tickling spasmodic cough coming on in the evening, and recurring at intervals through the night, is a very common symptom. When violent, it gives rise to retching, and some phlegm is brought up into the throat from the stomach, which often excites a suspicion in the attendants of an incipient pertussis or consumption. The breathing during sleep, is hurried and louder than usual, pulse full and preternaturally quick; tongue white, and the bowels alternately loose and costive; appetite craving, failing as the looseness abates; alvine motions scanty and unnatural, being either dark and slimy, green, or sometimes of a light colour. The skin is harsh and dry. The flesh and strength waste, whilst the body becomes swelled. During some time the appetite continues craving; for, however plentiful may have been the meal, the desire to eat again is soon renewed. The patient at length begins to throw up his food, and as the complaint advances, he becomes difficult in choice of it; and though frequently asking for it, yet eating but little, the appetite being only good when a choice or novel kind is offered, and a preference is often shewn for that which is dry, as bread that has been some days baked.”

This disease, in infancy, is frequently confounded with other complaints ; such as irritation from difficult dentition, or from worms in the intestinal canal. " Sometimes it resembles the *tabes mesenterica* so closely, as to require the most minute inquiries to be made respecting its history and progress, whilst it sometimes assumes the symptoms of *hydrocephalus internus*." In its chronic form, it is often confounded with dyspepsia, and with the mild hysteria of women, and hypochondriasis of men ; whilst it is called chlorosis in the youth of one sex, it is frequently denominated a chronic weakness in the other. " The more important diseases, however, with which it is, perhaps, most liable to be confounded, and from which it is of most importance to distinguish it, are the anasarca of debility, *phthisis pulmonalis*, and the organic inflammatory affections of the liver ; to all of which it occasionally bears a striking resemblance."

" This disease is not always found under the well marked form in which it has just been described. Sometimes one or more symptoms prevail over the rest, and the disorder assumes a strong likeness to some other important disease : at other times, it is met under appearances so disguised, as to give to it something of the character of an anomalous and undefinable affection."

The swelled and inflamed state of the gums of infants, which is generally ascribed to some natural difficulty of dentition, is considered by the author, as for the most part, a symptom only, and not as is commonly thought, a cause of the complaint. " For," says he, " it has frequently occurred to me to observe, that symptoms supposed to arise from teething, have yielded readily to the remedies adapted for this complaint (*marasmus*)."

The author says " I am satisfied of the justness of the opinion entertained by many, that the round long worm, (the only kind that is considered capable of exciting this disorder in children,) is never a direct cause of fever." To this opinion we can by no means assent ; we have frequently known febrile symptoms of considerable violence recede at once, on the expulsion of a number of *lumbrici*, and we feel

persuaded, that there are few physicians, who have not made similar observations. Why should not the irritation of worms in the intestines, produce febrile excitement, as well as that of any other morbid irritant? Do not worms frequently produce the most alarming effects on the nervous system? Why should they not also be the cause, sometimes, of arterial excitement?

When a chronic form of marasmus attacks young women at the period of life of an expected change, it commonly prevents it, and the complaint then passes under the name of chlorosis. The author is of opinion that disorders of the digestive organs, is too frequently referred to some specific organic disease of the liver, when in general, this organ is only disordered in its action. After dwelling on the impropriety of such views, he goes on to treat of the various symptoms which arise sympathetically from a disordered state in the secretory functions of the liver.

“When the irritation arising from a disordered state of the functions of the liver, is directed to the membrane lining the larynx and trachea, it gives rise to the bilious cough, which, in many cases, very strongly resembles some of the forms of phthisis pulmonalis; indeed, so strong is this resemblance, that practitioners the most familiar with them, may be ready often to confound them.” He then goes on to lay down the diagnosis of this species of pulmonic irritation. “The breathing in the cough of marasmus, if hurried in the evening from the accumulation of phlegm, or on the accession of fever, is generally calm and natural in a morning;” the pulse less rapid and wiry than in genuine phthisis. The alvine discharges, which in phthisis are commonly of a healthy appearance, are, in marasmus, uniformly and necessarily of an unnatural colour and fœtor. The patient affected with the “bilious cough is, in the advanced stages of this disorder, comparatively indifferent about himself, and gives his answers apparently with reluctance;” whilst the patient of genuine pulmonary consumption, is more or less animated at the view of a new physician, and with the hope of a new remedy, and

expresses his hope that he will be well, if he can only have his strength a little restored.

This part, of the work before us, is very interesting, and though nothing, perhaps, is said, which is strictly new, the author has succeeded admirably in rendering his subject intelligible, and in giving great plausibility to his opinions. The bilious cough, which is so easily mistaken for phthisis, has been accurately described a few years ago, by Dr. Wilson Philips, and unquestionably, deserves much attention. There is another disease analogous to the "bilious cough," which the author considers as proceeding sympathetically from a disordered state of the secretory functions of the liver. It is "that fatal decrease of the bronchia, noticed lately by several writers," and which consists in an ulceration of the bronchia, attended by a purulent expectoration, and a hectic fever, with its concomitant symptoms. The voice, in this disease, as well as the cough, is hoarse and partly whispering. The pulse is quicker and harder than natural, but it has not that peculiar sharp wiry feel, which is observed in phthisis from tubercles. Dr. Ayre says, that since he has directed his attention to this disease, he has always found it attended with bilious irritation.

The author then goes on to speak of the connection between the arrangement of the hepatic functions, and the symptoms of hydrocephalus, and points out the distinctive marks, by which these symptoms of hepatic irritation, are to be distinguished from genuine hydrocephalus acutus.

The observations made in relation to this subject, appear to us perfectly well founded, and of the utmost importance in practice.

The views which the author entertains concerning the pathology of marasmus, are—

"1. That this disorder consists in a deranged and imperfect action in the secretory function of the liver, and a consequent deficient and unhealthy secretion of bile, as is manifested by the alvine discharge not having that colour, which is always

imparted to them by it, when it is secreted in a healthy state, and in the proper quantity.

2. "That this derangement in the function of the liver, commonly arises from a disorder commencing in the stomach; for the function of digestion is performed by organs, whose actions, by means of a nervous union established among them for this purpose, are rendered accordant and co-operative; the healthful action of the liver depending upon a stimulus imparted to it by the stomach, in obedience of this law."

3. That in certain deranged states, therefore, of the stomach, the precise nature of which is unknown, there is either a morbid or an imperfect stimulus given to the liver, by which its secretory function is impeded, and a bilious fluid produced, deficient in its quantity, and commonly of a morbid kind.

4. That as an interruption in the accustomed actions of a secreting organ occasions a congestion of its vessels, the diminished secretion of the bile gives rise to a congestive state of the vena portarum and its branches; and in some cases, to a similar state of congestion in those organs, whose venous system is associated with that of the liver.

5. That in consequence of those efforts which nature makes to free herself from disorder, this congestive state is sometimes spontaneously removed by a copious secretion of bile, constituting the bilious diarrhœa, or the cholera morbus: and that in other cases, it is temporarily relieved by a hemorrhoidal flux, or by the discharge of blood from the loaded extremities of the vena portarum; occasioning in this latter case, and when in small quantities, the black and tar-like, and often putrid and fetid stools; and when in excess, the idiopathic hæmatemesis or melæna.

6. That whilst this congestive state of the liver produces an assemblage of symptoms, resembling, in many points, the acute inflammation of that organ, it differs essentially from that state in many important particulars. For in the acute inflammation of the liver, it is the arterial action of the organ that is excited, and the congestion, (if the expression be allow-

able) is arterial ; the secretory function of the organ, from its being carried on by a distinct class of vessels, partaking only secondarily, and partially, in its effects ; whilst in the venous congestion of the liver, consequent upon an interruption in its secretory action, the arterial system of the liver is necessarily but little, if at all, affected ; the congestive state in that organ being, in all probability, limited to the vena portarum and its branches.

7. And lastly, that the indications for the removal of these morbid but dissimilar states, will, therefore, necessarily be different. The inflammation in the liver will demand the same treatment which is applicable to inflammation in other parts of the body, for it differs in nothing from that state in them, either in its origin or nature ; whereas, in the other disorder, from its having nothing in common with inflammation it will not, as I have repeatedly found, be benefitted by venesection, or by blistering and the severe antiphlogistic regimen ; but the principal object to be attained, will consist in a renewal of the healthy secretory action of the liver, as it is from the interruption of this, that the congestive state, with its immediate train of painful symptoms, has arisen.

Under the head "remote causes," some very pertinent and valuable observations are made, in relation to the diet of infants. He dwells with much emphasis, on the importance of mothers raising their own infants. We would point out this part of the work as being particularly interesting.

The general indications of cure, laid down by the author, are—

"1st. To correct the disordered action of the liver, and remove the congestive state of that organ. 2d. To cleanse the bowels of their morbid secretions, and the imperfectly digested matters collected there. And 3d, To lessen or avoid all those causes which tend to aggravate the complaint."

The remedies he relies on for the fulfilment of the first two indications, are, small doses of the mild preparations of mercury, followed by some other gently purgative medicine.

He does not, however, approve of strong and frequent purging, in the marasmus of children ; the plan is, by the mercury, given in very minute doses, to change the morbid state of the secretory function of the liver, and to evacuate, in a gentle manner, the bowels of their noxious contents. This treatment he also follows in cholera morbus and bilious diarrhœa, both of which diseases he considers as arising from a deranged function of the liver.

A few cases from the work will exemplify the author's practice :—

CASE I.

Mr. R., aged 20, August 7th. Began in the night to be affected with severe nausea, and sickness, and with an oppression and pain at the stomach, vomiting up a considerable quantity of green and bitter bile. Has been sick almost every few minutes during the morning ; pulse natural ; bowels have not been moved since yesterday. A third part of a grain of calomel to be taken every half hour during six hours, or until the sickness is removed.

Second day. Took the twelve pills that were ordered, and was not sick after taking the third pill. Has left his room to-day, and is able to eat, and feels quite free from complaint.

CASE II.

Mary W., aged 5, August 5th. Is affected with vomiting nearly every half hour, of a yellowish green fluid, attended with pain and frequent purging. Has been ill of this complaint during the last three days. Has much thirst and fever. *To have a quarter of a grain of calomel every half hour.*

Second day. Ceased throwing up after the third dose, and has not been sick since ; bowels are regular ; has no complaint but weakness.

CASE III.—MARASMUS.

Thomas Cox, aged 2, July 15th. Is affected with much pain in the body and head ; sleep much disturbed ; appetite very bad ; bowels sometimes loose, and at other times constive ; fæces white and slimy ; has much fever and thirst ; is listless ; tedious, never standing down ; perspires, and frequently starts during sleep. Has been affected with these complaints during the last six weeks, and worse for the last fortnight. They began immediately after a mild attack of measles ; was very well before. A small dose of calomel was ordered to be taken nightly, with magnesia, and following mornings.

Fifth day. Bowels have only been slightly moved ; the alvine discharges dark ; passes his water with difficulty. In other respects is much better, and plays about, and perspires but little during the night ; has not taken the magnesia, having resisted the attempts made to give it ; has taken the powder, containing the calomel, readily.

Tenth day. Stools of a much better colour ; appetite good and not craving ; has still some pain in his body ; is playful, and always on his feet. Has been much better during the last five days.

Fourteenth day. Is free from complaints.

A System of Chemistry, in four volumes, 8vo. By Thomas Thomson, M. D. &c. &c. From the fifth London edition, with notes by Thomas Cooper, M. D. &c. Philadelphia, 1818.

SUCH has been the rapidity with which facts and improvements in chemistry have followed each other, of late ; and so multiplied are the sources from which they have been accumulated, that a full knowledge of them must necessarily be confined to a small part of the scientific community, while they are only to be found in the numerous periodical magazines of Europe and America. A work, therefore, devoted exclusively to this branch of science, and embracing all its important novelties, has been much wanted ; and we are now gratified with one from the pen of an experienced chemist.

From the rank that Dr. Thomson maintains as a chemist, from his easy access to the various sources of knowledge, and from his general communication with the scientific world, our expectations in favour of the present work, were very sanguine : and the well known ability and indefatigable industry of the annotator, removed all fear of disappointment.

The satisfaction, however, that we derived from its perusal, was not such as we had anticipated. With respect to new facts and improvements, this edition is undoubtedly very valuable. It bears, at least, the stamp of persevering industry, and must be found to be useful to the practical chemist. When we consider the diversity of the science of chemistry, and the great number of its experimentalists, in the various parts of the world, we cannot be surprised at the omission of much matter of this kind. Indeed, if some facts of importance were neglected, it should not constitute a ground of censure. We will not, therefore, place the few omissions of this nature, which we have detected, in the scale, against the author.

But when facts and experiments, not only extremely interesting in themselves, but also of the first importance to the

science, and given to the world by the most eminent and successful chemists, are entirely neglected, we are reluctantly constrained to express our disapprobation. And when we feel convinced, that such experiments were omitted because they militated against a favourite theory, (and such must be the opinion of any candid and well informed reader of the present work) then, indeed, we would dip our pen in gall, and sharpen the darts of criticism.

In the proper place, we will expose an instance of this flagrant abuse of the power that eminent authors are well known always to possess over the public opinion.

The style and language of this book is not such as we admire in scientific or classical works. Independent of vulgarisms and awkward expressions, which would annoy a poetic ear, and elicit many a flash of satire from the pen of the literary critic, the language is sometimes obscure, and not unfrequently perplexing to those who are not already acquainted with the subject. Many of the descriptive dissertations are vague, indefinite, and unsatisfactory, even when the subject is extremely simple, and admits of plain decisive language. Thus a cloud of obscurity is frequently thrown over the most simple matters.

What can be more easily and simply explained, than the mechanical difference between gases and vapours? We have a whole page on this point, at the expense of repetition, sentences entirely foreign to the subject, and, we think, of much impatience to the readers; the whole of which amounts to these few words, that matter depends upon caloric for its existence, in a gaseous state; and that in the different gases or fluids, there are varieties in the quantity and force of its combination. But prolixity is not the only fault of this description of vapours. We find a want of philosophical reasoning.

“When a vapour is compressed, a portion of it loses its elastic form, and is condensed into a liquid. The consequence of this condensation is, that the remaining portion continues of the same elasticity as before the compression. Hence the elasticity of vapours does not increase as the pressure, like

that of gases." This inference is evidently unphilosophical and incorrect.

In trying the elasticity of air, under different degrees of pressure, certainly no inference can be drawn if the *quantity* of the air is either increased or diminished. In this instance, a portion of the air is actually removed when under pressure. So that although it is practically true that the elasticity of vapours does not increase as the pressure, it is not philosophically so. It might as well be said, that by continued and frequent compressions, vapours lose all their elasticity; because, at each time, a portion is condensed: but in this case the vapour is *removed*: no wonder then that its elasticity should not be apparent.

"When vapours are heated, their elasticity is not only increased, but a new portion of liquid, if any be present, is converted into vapour. Hence, the elasticity *apparently* increases at a much greater rate than that of gases."

This we also maintain to be unphilosophical, and constitutes no shade of difference between vapours and gases. For it is well known to every practical chemist, that most of the gases, if not every one, exhibit the same phenomena, under the same circumstances, *i. e.* that when heated in contact with the substance from which they are forming, their extrication is facilitated. We cannot see the necessity, in trying the elasticity of vapours, of having another substance mixed with them. It is not the phenomena exhibited by a *liquid* and a vapour together, that should form the character of the latter.

We are of opinion that the terms gas and vapour, ought not both to be in use, or at least, to constitute two different classes of bodies, as there is no ground for a scientific division of aeriform fluids on the difference of their mechanical properties. Indeed, our author himself, does not appear to think that a line of demarcation can be drawn between them.

"Among those bodies commonly considered as gases, there are some, which, in very low temperatures, and when subjected to strong pressure, assume the liquid form. This is the case with ammonia; and it is probable that it is the case

also with muriatic acid, fluoric acid, and all those gases that are absorbed in great quantities by water."

"The other gases cannot be made to assume the liquid form, by any degree of compression or cold, hitherto applied."

Here, we wish he dropped the matter, as all has been said upon it that can be said; but he goes on to make a kind of distinction between these bodies, which, for all the good that it is calculated to do, or all the ingenuity that it displays, might as well have been thrown into the fire.

"When the affinity," (*i. e.* between the caloric and the base) "is not sufficient to resist the forces *usually applied*, the elastic fluids are called vapours; when it is, they are called gases. In some vapours the elasticity does not become sensible, except at *temperatures higher than those usually applied*; in others, it becomes sensible at the *common temperatures*: in some gases *degrees of compression, or of cold, which, though not common*, are still within our reach, destroy the elasticity; while in others, it continues, *however cold we make them, or however forcibly we compress them*."

We have taken the liberty of putting some of the above words in italics, that they may arrest the attention of philosophers on this side of the Atlantic. They appear to us to be late improvements of the thermometric scale, with which we may not all be acquainted. If any one should wish to be instructed as to the meaning of these terms, or their application to practice, we must refer him to Dr. Thomson himself: we confess that our learning is too superficial to give satisfaction on this point. But, with respect to the last sentence of the above quotation, we have no hesitation in pronouncing it to be absurd. That some gases retain their elasticity, *however cold we make them, or however forcibly we compress them*, is asserting that a total abstraction of caloric, (for by these words we have the idea of infinite power,) would not destroy their elasticity.

The principal improvements of this edition are, a more complete illustration of the atomic theory, and the doctrine of definite proportions; the introduction of three new articles

into the class of supporters of combustion and acidifying principles; the introduction of silex among the acids, and the acidifying property of hydrogen. With respect to the atomic theory, it is yet in such a state of imperfection, that it would not be proper to adopt any decided opinion of it. It reflects great credit upon its inventor, for his ingenuity and originality, but there are obstacles yet to be removed before it can be universally adopted. Whether it is calculated to facilitate our chemical researches, is a question which admits of doubt.

In many instances in the present work, we see its application to practice forced in such a manner, as certainly cannot be very creditable to Dr. Thomson.

Indeed, so much contradiction and confusion appears in its application in different parts of the present work, not only between the results of calculations of different philosophers, but also between our author's own calculations, that its adoption requires more credulity and love of novelty, than we possess. This is saying much, but we do not speak at random. Out of the numerous instances of contradiction and confusion that are afforded by Dr. Thomson himself, we select the following.

"From the experiments of Davy, and of Gay Lusac and Thenard, it appears, that soda is a compound of 100 sodium, and 34.1 oxygen; and the peroxide of sodium of 100 sodium, and 51.1 oxygen. Hence, it follows, that sodium must be a compound of one atom of sodium and two atoms of oxygen. These data give us the weight of an atom of sodium 5.882." *An. of Phil.* ii. 46.

"Hence, soda is composed of sodium 100—oxygen 33.3. If we consider soda as a compound of one atom of sodium, and one atom of oxygen, the *weight of an atom of sodium* will be 3.0, and the weight of an atom of soda 4." *Vol. i.* 275. In the "*System of Chemistry*" Dr. T. gives us the weight of an atom of arsenic 4.75; in the *An. of Phil.* 6. Azote, in the first, 1.75, in the latter 0.878. Antimony 5.625, and 11.111.!

These are great variations on a point whose importance and very existence depends upon its mathematical accuracy.

VOL. II.—3 G

The calculations of Dr. Prout, who is frequently appealed to as authority, by Dr. Thomson, do not always agree with the calculations in the "System of Chemistry." "Thus," says Dr. P., "ammonia has been stated to be composed of one atom of azote, and three of hydrogen; *whereas, it is evidently composed of one atom of azote, and only 1.5 of hydrogen*, which are condensed into two volumes, equal, therefore, to one atom."

"It is obvious from this," says Thomson, "that ammonia is composed of three volumes of hydrogen, and one volume of azote, *compressed* into two volumes; hence, its constituents by weight are,

| | |
|----------|--------|
| Hydrogen | 0.1947 |
| Azote | 0.9722 |

Thus we see that ammonia is a compound of three atoms of hydrogen, and one atom of azote. vol. i. 200. After having seen how widely Dr. Thompson has disagreed with himself, in affixing an equivalent number to arsenic, and how far Dr. Prout has differed with him, it is somewhat amusing to see the following paragraph. "We see from these, that if 14 and 3.625 represent respectively the weight of an atom of oxide of lead and of lime; the weight of an atom of arsenic acid is represented by 7.214 and 7.36, the mean of which numbers is 7.286, which must represent the weight of an atom of arsenic acid very nearly. Perhaps, the number 7.25, which is a multiple of 0.125, (the weight of an atom of hydrogen,) is nearest the truth. This number must contain the atoms of oxygen, and the weight of an atom of arsenic. Let us suppose that the oxygen in this number is represented by 2.5. In that case, the weight of an atom of arsenic will be 4.75, and the arsenic acid will be a compound of

| | | | | | | | | | |
|---------|------|---|---|---|---|---|---|---|--------|
| Arsenic | 4.75 | - | - | - | - | - | - | - | 100 |
| Oxygen | 2.5 | - | - | - | - | - | - | - | 52.631 |

Now, this is almost exactly the mean of the experiments of Prout and my own. *I am, therefore, disposed to consider it as accurate.*"

In vol. i. page 214, the weight of an atom of borax is stated to be 0.66 ; in page 260, it is 0.875.

If we were so disposed, we might fill pages in exposing the various inconsistencies of this part of the work in question, but enough, we presume, has been said, and in mercy to our readers, we will desist from farther animadversion on the atomic theory.

Of the introduction of Chlorine, Iodine, and Fluorine, as supporters of combustion. The character of chlorine has been the subject of one of the warmest controversies that has ever existed in the chemical department. Those philosophers who were of opinion that it was an elementary substance, endeavoured by ingenious experiments, and plausible theories, to establish their doctrine ; while they were continually opposed by another party, who, by demonstrations equally plausible, and experiments equally, if not more, ingenious, endeavoured to prove its composition.

At present, the most eminent chemists are divided in their opinions respecting this matter. In this state of uncertainty, we were not a little surprised to find chlorine introduced in a system of chemistry, from such authority as Thomson, as a simple supporter of combustion, without a word of intimation, that different opinions existed respecting it. Notwithstanding the great importance of the question, and the eminence, talents, and persevering industry of those of its investigators, who have taken a stand in opposition to the opinion that Dr. Thomson supports, it is here introduced as an established doctrine, to which there existed no objection.

We do not think that this is candid ; on the contrary, it savours strongly of prejudice, and ill comports with that spirit of independence and impartiality, which should direct the pen of a philosopher. This is not the way to support that character which is claimed for the book in its introduction.

“ The object of this work is to exhibit as complete a view as possible of the present state of chemistry ; and to trace at the same time its first rude dawnings as a science, to the improved state which it has now attained. By thus blending the

history with the science, the facts will be more easily remembered, as well as better understood ; and we shall, at the same time, pay that tribute of respect to which the illustrious improvers of it are so justly entitled."

Let the indefatigable investigators of the chlorine theory, who are among the most illustrious improvers of the science of chemistry, and the neglected Higgins, who claims the invention of the atomic theory, ask how far he has respected this rule ; and how he has paid to them that tribute of respect to which they are most justly entitled. Surely it is not done by treating their opinions and their labours with utter contempt.

Similar objections may be opposed to the reception of iodine and fluorine, as simple substances. They may be found to be oxides ; they cannot be procured without the agency of oxygen, and their agency appears to be so circumscribed, in comparison to that of oxygen, that they do not seem to be entitled to a rank with that principle, until some new phenomena are observed, which shall be more decisive of their characters than any that have yet appeared.

It is a matter of some curiosity, how Dr. Thomson, with his almost fastidious nicety, on some points, reconciles the description of silex with his definition of acids, according to which, they are possessed of the following properties : sourness to the taste, the power of changing vegetable blue colours to red, and restoring the blue when it has been changed to green by an alkali, combining with water in any proportion, and forming neutral salts with alkalies, earths, and metals.

How many of these properties does silex possess ? Dr. Thomson, indeed, admits, that " every acid does not possess all these properties ; but all of them possess a sufficient number of them to distinguish them from other substances." The question very naturally follows this remark, how many of these properties are sufficient to constitute an acid ? But of this we are not informed, so that the definition must be of no weight at all, or if it is adopted, the introduction of silex into the class that it describes, must appear a palpable absurdity.

In the description of this substance, it is said, that it is "*incapable of combining with acids,*" and that "*none of the simple supporters, as far as it is known, are capable of acting upon silica.*" Did Dr. Thomson forget the remarkable salt, so common, and so abundant in his own country, that contains an acid used to corrode glass, by combining with it, silex? And, in the latter instance, did he forget the composition of glass?

The acidifying power of hydrogen, although treated in this work with all the dignity of an acknowledged truth, will require almost as great an innovation on the definition of acids for its establishment, as that required for the admittance of silex as an acid. Dr. Murray, we think, is rather precipitate in declaring that sulphuretted hydrogen is *unequivocally acid*. It destroys the blue colour of litmus, but without changing it to red. It combines with alkalies; so does sulphur, without the aid of hydrogen.

The acid properties of sulphuretted hydrogen may, without any great strain of probability, be attributed to a portion of sulphurous acid formed from a decomposition of water, or oxygen attracted from the atmospheric air.

These are objections to the admission of sulphuretted hydrogen among the acids, that do not appear to us to be destitute of foundation; and until new phenomena are observed respecting that substance, inexplicable upon the established theory, we are excusable if we withhold our assent to its new appellation.

The *system* which the author has adopted, appears to us to be extremely defective.

The work is divided into two parts; the first is termed the "*science of chemistry, properly so called:*" the second, "*a chemical examination of nature.*" We confess that we have not sufficient penetration to discover the difference between the titles of these two divisions. What is the *chemical examination of nature*, but the *proper science of chemistry*?

The repetition and confusion that this arrangement necessarily introduces, may be evident at first sight to the chemist.

We think that we are not going too far when we say, that almost every substance is twice described in this book. We are at no loss to produce instances of this stupid fault.

Under the head arsenic, in the first volume, he introduces arsenic acid, and occupies nearly two pages in the description of arsenic acid, and the method of preparing it. In the second volume we find a chapter dedicated to arsenic acid, and containing little else than a repetition of what we had read before. In one of the descriptions of this substance we read of a very curious property that it possesses, viz. that it "remains *liquid* even when evaporated to the consistence of a *jelly*." Under the head iron, in the first volume, we find about two pages treating of the combinations of that metal with sulphur, phosphorus, &c. and descriptions of the pyrites, of which we have a complete repetition in the third volume. But it is needless to mention instances of this, every chapter will afford them.

The "*science of chemistry, properly so called*," is divided into three parts. The first treats of elementary matter; the second, of compounds; and at last, in the third volume, we come to the consideration of the causes that produce these combinations of matter. This appears like an inversion of the natural order of chemical study, and cannot fail to perplex and disgust a student, at his first entrance upon the study. It would have been well if the author had advised students to have commenced with his third volume. In the first volume we are given to understand, that *decompositions* are owing to *attractions*, but we do not discover what the author means by attraction, until we arrive at the third volume.

The same oversight has been committed in the introduction of the atomic theory. We may defy a beginner, of the brightest talents, to form any idea of it, from the following words. "Now, if we make 1.00 represent the weight of the smallest particle of oxygen that can unite with a body, we shall find afterwards, that the smallest quantity of chlorine that can combine with a body, will be represented by 4.5. Hence, we may conclude, that protoxide of chlorine is a compound of one atom of chlorine and one atom of oxygen." Thus is the stu-

dent obliged to read calculations, with the data of which he is entirely unacquainted, through all that part of the work devoted to simple substances.

The second division of the first part, treats of *ponderable bodies*, which are arranged under three heads: *supporters of combustion*; *incombustibles*; and *combustibles*. According to the definitions which distinguish these classes, azote is the only incombustible substance known. By his definition of an incombustible, Dr. Thomson makes the class of supporters of combustion entirely an unnecessary primary division. "By *incombustible*, I mean a body, neither capable of *undergoing* combustion, nor of *supporting* combustion." Oxygen, then, is a combustible substance !

As supporters of combustion, chlorine, iodine, and fluorine are introduced, without a hint of their doubtful character, to the utter contempt of the opinions of some of the most eminent chemists in the world.

We have already stated our objections to the admission of chlorine as a simple supporter of combustion. Iodine has no better claim.

We will quote a few lines from our author that seem intended to establish the character of fluorine.

"When fluoric acid and potash are brought into contact, a violent action takes place; a solid white substance is formed, and a quantity of hydrogen gas is discharged. If the fluoric acid be free from water, it is obvious that this result is best explained by supposing the fluorine and potassium to combine, and form the solid substance, while the hydrogen, previously united to the fluorine in the acid, makes its escape in the form of gas. But it requires to be ascertained whether fluoric acid, of the specific gravity of 1.8509 contains any water.

"For this purpose, Davy put a quantity of it into a platinum tray, and put it in contact with ammoniacal gas, till it was saturated with that alkali. By this means a white salt was formed, known by the name of fluuate of ammonia.

“ When any acid that contains water is combined in this manner with ammoniacal gas, if we heat the salt formed, water is always disengaged. Thus sulphuric acid, or nitric acid, or phosphorous acid, when saturated with ammoniacal gas, and heated, give out always abundance of water. But fluide of ammonia, when thus treated, gave out no water. Hence, we have no evidence, that fluoric acid contains any water.”

This foundation is too slight to support the fabric which is built upon it. It is no proof that fluoric acid does not contain water, because none of that substance was observed to escape from fluide of ammonia when heated. Upon a similar experiment Dr. Murray placed great dependence for the truth of his opinion respecting chlorine. In that instance Sir H. Davy could not discover water; Dr. Murray did: and his experiment was repeated by others, who obtained similar results.

The third class is divided into three genera: the characteristic marks of which are—of the first, the property of forming acids, by uniting with the supporters of combustion, or with hydrogen. There are eight substances answering this description, hydrogen, carbon, boron, silicon, phosphorus, sulphur, arsenic, and tellurium.

Of the second, the property of forming alkalies, or bases capable of constituting neutral salts with acids, by uniting with the supporters of combustion. This genus consists of twenty-eight articles, and is divided into five families. For what reason the author has not given us to understand, neither can we discover.

The third genus consists of bodies producing by their union with the supporters of combustion imperfect acids, or substances intermediate between acids and alkalies: they are six in number. Antimony, chromium, molybdenum, tungsten, columbium, and titanium.

The reason that is given for this classification, is a desire to avoid the confusion that is introduced into science by *confounding every thing under the name of metal*.

To avoid this confusion, and to prevent dissimilar bodies from coming together, arsenic and tellurium are placed with

hydrogen and carbon ; boron and silicon, with phosphorus and sulphur, and chromium takes its place with the semi-alkalifiable bases. Has Dr. Thomson never heard of chromic acid, and the chromates ? Arsenic and tellurium, which figure in the first class, do not form better defined acids than the chromic.

We object to the definition of the first of these divisions of simple combustibles. It does away the necessity of a substance being capable of uniting to oxygen, to be classed with combustibles. *Hydrogen* there supplies the place of oxygen : and if any substance may be found that will unite with hydrogen, and form an acid, but have no affinity at all for oxygen, still it is a *combustible* substance. In another place he says, "by *supporters*, I mean substances, which are not themselves, strictly speaking, capable of undergoing combustion." The only remark on which, that we wish to make is, that chemists should always speak strictly. In many other instances the author is not more happy in his definitions.

"By well-water is meant the water which is obtained by digging deep pits, which is not in sufficient quantity to overflow the mouth of the well ; but which may be obtained in abundance by pumping." The whole chapter indeed, from which the extract is made, does not seem to be the production of greater ingenuity or more profound knowledge, than is displayed in the description of well-water.

"There is, perhaps, no phenomenon more wonderful in itself, more interesting on account of its utility, or which has more closely occupied the attention of chemists than *combustion*. When a stone or a brick is heated, it undergoes no change except an augmentation of temperature ; and, when *left to itself*, it soon cools, and becomes as at first. But with combustible bodies, the case is very different. When heated in the open air they suddenly become much hotter *of themselves* ; continue for a considerable time intensely hot, sending out a copious stream of caloric and light to the surrounding bodies. This emission, after a certain period, begins to diminish, and at last ceases altogether. The combustible has now undergone a most complete change ; it is converted into a substance

possessing very different properties, and no longer capable of combustion. Thus when charcoal is kept for some time at a temperature of about 800° it kindles, becomes intensely hot, and continues to emit light and caloric for a long time. When the emission ceases, *the charcoal has all disappeared, except an inconsiderable residuum of ashes*; being almost entirely converted into carbonic acid gas, which makes its escape, unless the experiment be conducted in proper vessels. If it be collected, it is found to exceed greatly in weight the whole of the charcoal consumed."

"Sulphur and phosphorus combine with the metals, and with some of the earths. The combination is not formed without the assistance of heat; this melts the sulphur and phosphorus. At the instant of their combination with the metallic or earthy bases, the compound becomes solid, and at the same time suddenly acquires a strong red heat, which continues for some time. In this case, the sulphur and the phosphorus *act the part of a supporter; for they are melted, and, therefore, contain a great deal of caloric*: the metal, or earth, acts the part of a combustible; for both contain light as a component part. The instant of combination, the sulphur or phosphorus, combines with the metal or earth; while the caloric of the one, uniting with the light of the other, flies off in the form of *fire*. The process, therefore, may be called *semi-combustion*, indicating by that term that it possesses *precisely one half of the characteristic marks of combustion*." Thus, the author has found himself so cramped with the definition and theory of combustion, which he has previously adopted, that he finds himself obliged to invent the horrid term *semi-combustion*.

How can the term *combustion* be applied in this case, consistently with the doctrine, that the presence of a supporter of combustion is necessary to the production of that phenomenon? In page 129, the author says, "now every product is either, 1. an acid; 2. an oxide; 3. a chloride; or 4. an iodide." Do the compounds of sulphur and phosphorus with the metals, earths, and alkalies, come under these heads? Here is evidently

either a very imperfect explanation of the term *combustion*, or a very absurd application of it. In the chapter on combustion we find the following words : " M. Lavoisier explained completely the first of these phenomena, by *demonstrating*, that, *in all cases*, oxygen combines with the burning body." Again ; " he fully established the existence of this general law. In every case of combustion, oxygen combines with the burning body." " According to the theory of Lavoisier, which is now almost generally received, and considered by chemists a full explanation of the phenomena of combustion, &c." After all which, without any modification of the axiom thus established, we find that the author admits *three* substances, the presence of one or other of which is absolutely necessary, in order that combustion may take place.

Many other instances of inconsistency and contradiction might be pointed out, such as that none of the simple combustibles or incombustibles have any action on citric acid ; almost immediately after which, we are told that citric acid oxidises iron, zinc, and tin. But we believe that enough has been said on this point.

On the subject of electricity, we must differ with the author in opinion. In vol. i. p. 147, *et seq.*, we there find it stated, that in the year 1734, Mr. Dufay published a paper on electricity, containing two *capital discoveries* ; the second of which " may be considered as constituting the foundation stone of the science of electricity."

The first of these " capital discoveries," was the attraction and repulsion of light bodies, by an excited electric ; the second was, that " there are *two* kinds of electricity." After having mentioned some subsequent improvements and discoveries, among which, that of the identity of *thunder* and electricity, by Franklin, the author makes his choice of the different theories which have been advanced respecting electricity.

" Dufay's original opinion that there exists two kinds of electric fluids, the vitreous and resinous, seems to me to correspond better with all the phenomena, and to lead to fewer

perplexing consequences than the theory afterwards substituted for it by Dr. Franklin."

"This theory of Franklin's was put into a mathematical dress, by Epinus and Cavendish, and has been almost universally adopted both in Great Britain and on the continent. But the recent discoveries made in the science, by the invention of the voltaic pile, seem to me to agree much better with the theory of Dufay, than with that of Franklin; I shall, therefore, adopt it in preference, in the present sketch." Although Dr. Thomson acknowledges that the theory of Franklin is almost universally adopted, yet he does not condescend to give any reasons for his preference of the other. He says that Dufay's theory "seems to correspond better with the phenomena of electricity," and to "agree better with the discoveries made in the science, by the invention of the voltaic pile;" but he has given us no instances of this superiority.

Does our author suppose, that at the present age of free discussion, and after having seen so many examples of the perplexity and ignorance in which those have always groped, who take the *master's word* for law, without thinking for themselves, theories are to be promulgated by his mere *ipse dixit*? Had he advanced any arguments in favour of his adopted theory, we would have answered with argument; but we meet him on his own ground, and *assert* that Dufay's theory does *not* best explain the phenomena, nor best agree with the discoveries of the voltaic pile: and it is contrary to the rules of philosophising to admit of two causes to explain a phenomena, where one is sufficient. In the course of this chapter we find an error which excites our surprise, "but it was afterwards ascertained, that the energy of the pile, at least, as far as *chemical* phenomena are concerned, *increases* in proportion to the *size* of the pieces."

The galvanic fluid and caloric are set in motion by the voltaic pile, and its various modifications. When the *number* of plates is augmented, the power of the battery with respect to decomposition, and the sensation produced upon an animal who forms the connexion between the opposite poles, is in-

creased: but when the *size* of the plates is increased, caloric is produced in greater quantity, which is not supposed to have any agency in the decompositions effected by the galvanic apparatus. We have seen more than one apparatus of the latter description, which would ignite and fuse slips of different metals, almost at the instant of their exposure to their action, while they scarcely produced the smallest sensation of a *shock*.

We find numerous instances of trifling and unphilosophical remarks throughout this work, that do not agree well with our ideas of the dignity, perspicuity, and decision of a philosophic writer.

We are told, that "the quantity of heat produced by the action of a large galvanic battery, is nearly as intense as that produced by the most powerful *burning glasses*."

Where is the philosophy, or what instruction is conveyed in a comparison of the powers of two sources of caloric, which may be said at once to be infinite? Again, it appears somewhat curious to us, to hear a chemist, one who is familiar with the strange phenomena that astonish the ignorant, say, in speaking of the elegant crystal, the diamond, and a piece of charcoal, after having demonstrated their *identity*, "but when we consider the very different properties of the two substances, we feel a strong repugnance to embrace this conclusion;" and these "very different properties," are merely their external appearance and mechanical peculiarities. How will our author bring himself to believe, that the constituents of the air that he breathes will also form a powerful acid?

We were perfectly astonished to see, in a meteorological table, in vol. iii. p. 158, the miracle of the "shower of fire and brimstone," on Sodom and Gomorrah, mentioned with all the regularity of a well authenticated natural phenomenon!

As an instance of the author's unphilosophical manner of demonstration, and contradictory positions, we extract the following from the third volume:—

"These primitive forms must depend upon the figure of the integrant particles composing these crystals, and upon the manner in which they combine with each other. Now, by

continuing the mechanical division of a crystal, by cutting off slices parallel to each of its faces, we must, at last, reduce it to so small a size, that it shall contain only a single integrant particle. Consequently, this ultimate figure of the crystal must be the figure of the integrant particles of which it is composed. The mechanical division, indeed, cannot be continued so far, but it may be continued *till it can be demonstrated that no subsequent division can alter its figure*. Consequently, it can be continued till the figure which it assumes is similar to that of its integrant particles."

We are entirely ignorant of any principle upon which such a demonstration can be founded. No doubt a crystal will retain its original figure, to whatever size it is reduced, if the reduction is made by "*cutting off slices*," parallel with each of its faces; but can the body so reduced be demonstrated to be the integrant particle?

"If the figure of crystals depends upon the figure of their integrant particles, and upon the manner in which they combine, it is reasonable to suppose that the same particles, when at full liberty, will always combine in the same way, and consequently, that the crystals of every particular body, will be always the same. Nothing, at first sight, can appear farther from the truth than this. The different forms which the same bodies assume are often very numerous, and exceedingly different from each other. Carbonate of lime, for instance, has been observed crystallized in no fewer than forty different forms. But this inconsistency is not so great as might at first appear." We think, on the contrary, that this inconsistency appears the more glaring the more it is examined. The author has said, that he can demonstrate that the figure of the crystal is similar to the form of the integrant particles of which it is composed. The same demonstration would prove that there are forty different figures of the particles of carbonate of lime: and by reading a few pages farther, we see, instead of an explanation of this seeming inconsistency, a much greater one if possible. "Häüy has found that the *figures* of the *integrant particles* of bodies, as far as experiment has gone, may be

reduced to *three*." If there are but three figures of integrant particles, and it can be demonstrated that the figure of the crystal must be the same as that of the integrant particles of which it is composed, it is evident that there could be but three forms of crystals. And these data appear to be completely established in the mind of our author.

There is another fault that pervades this book generally, which, we think, deserves no slight degree of animadversion; particularly as it is one so easily remedied, and of course the less excusable.

Anterior to the invention of the nomenclature, which named every compound by a term derived from the appellation of its constituents, one of the greatest obstacles in the study of chemistry, was the difficulty of acquiring a knowledge of the names that were arbitrarily given to each substance. The elegance and great utility of the new method of denominating compound substances, is acknowledged and experienced by every chemist: it is, therefore, the duty of every one who claims that title, to discourage the practice of calling neutral salts, for instance, by those arbitrary names, which have been deservedly banished from the indices of scientific works, and are now only to be met with among apothecaries' apprentices.

We frequently meet, in the pages before us, with the terms *corrosive sublimate*, *salt of tartar*, *sal ammoniac*, *deliquescent salt*, *salt of hartshorn*, *common salt*, *olfiant gas*, *inflammable air*, &c. A student is, from this circumstance, obliged to have some dictionary continually by his side, which will explain the meaning of these barbarous terms; without which it is morally impossible for him to understand the rationale of some important experiments, which are related in Thomson's chemistry. We have, indeed, witnessed many instances of perplexity arising from the unlucky appearance of one of the "words of strange import and disgusting sound." Well may the student exclaim of the science which he is toiling to acquire, finding such unexpected obstacles in his way, *procul o procul este profani!*

T. M. H.

Tracts on Medical Jurisprudence; including Farr's Elements of Medical Jurisprudence; Dease's Remarks on Medical Jurisprudence; Males' Epitome of Juridical or Forensic Medicine; and Haslam's Treatise on Insanity: with a Preface, Notes, and Digest of the Law relating to Insanity and Nuisance. By Thomas Cooper, Esq. M. D. Professor of Chemistry and Mineralogy, in the University of Pennsylvania; and heretofore President Judge of the Fourth Judiciary District of Pennsylvania. To which is added, an Appendix, &c. 8vo. p. 472. Philadelphia, published by James Webster, 1819.

MEDICAL jurisprudence is a most important, though much neglected, study. "Whether we look upon this science, in its connexions with the actual practice of medicine, or as one of the accomplishments of medical education, without which it cannot be said to be complete; it will be found highly deserving of our regard: but in the former point of view alone, it is a duty imperative on the practitioner, to make himself acquainted with it, to its fullest extent. The physician or surgeon is often called upon to make depositions in courts of justice, respecting the cause of death, under particular circumstances; should he err on one side, the existence of a fellow-creature may be forfeited through his ignorance; by a mistake on the other, the guilty may be absolved, and the purposes of justice defeated. How mortifying the situation of the practitioner, who, called as witness on a trial, is unable to explain what is required of him, or delivers his evidence contrary to the dictates of science! Exposed to the buffetings of hostile counsel, his stupidity is soon brought to light: he retires an object of derision with the whole court, with a stain upon his character that the grave will scarcely efface!"

Convinced of the justice of these remarks, we join, sincerely, with Dr. Cooper, in lamenting the little attention that is paid to the study of medical jurisprudence in this country.

In our own university, especially, where the more immediate branches of medical science are so ably taught, this science is totally neglected. Nor can we help expressing a regret at the almost total neglect, which, in this otherwise justly celebrated institution, hangs over the collateral branches of our science—botany, animal chemistry, and natural history. We cannot approve of the plan of medical instruction, which restricts the student to the mere text-book routine of the more immediate branches of his profession. Let not those who minister in the temple of medicine, reject the entrance and aid of the sister sciences. Let them reflect, that medicine does not rest upon an independent basis; and, that it can flourish only where science is duly fostered.

Farr's Elements. This is the first tract in this volume. Its contents are arranged under nine heads: pregnancy, parturition, divorces, rape, murder of infants, homicide, idiotism and insanity, imposters, means of preserving public health. Although extremely condensed, this little tract is calculated to impart much useful instruction on the subject of forensic medicine. It forms a very satisfactory sketch of the objects of this science.

Dease's Remarks on Medical Jurisprudence. This also, is an interesting and useful essay. Its principle objects are, "to point out how far, in cases of supposed murder, anatomical inspection can ascertain the cause of death; to direct young surgeons in the more material processes of enquiry, and to enable them to distinguish the effects of injuries, from those spontaneous changes, dead bodies necessarily undergo; and to excite some attention to the present state of medical jurisprudence."

The observations of this writer are sensible, and indicate with clearness, at once the importance and the proper objects of forensic medicine. He gives the following directions for the anatomical inspection of the body:

"The first object of enquiry should be into the principal circumstances that attended, and have been deemed to have occasioned the person's death; for those, when known, will

direct the surgeon's attention in opening the body, to many important points, that would otherwise, perhaps, escape him. The surgeon should have paper, pen and ink, by him on a table, to take short notes of the more remarkable appearances, while the body is before him. Fully prepared and informed as to all those circumstances, the body should be cleaned, and placed on a table in clear day-light ; candle-light, for obvious reasons, is extremely improper on such occasions. The external appearances should be first carefully examined, and we should distinguish between those bloody suffusions and putrid distentions, which always rapidly take place after sudden death in full habits, from those that may arise from contusion or disease. Those are circumstances which require the utmost caution in the surgeon, for people not accustomed to inspect dead bodies, are very apt to be struck by such appearances, and instantly decide that the person's death was caused by some injury. After a careful examination of the external surface of the body, we begin to open the different cavities, but first the one in which we may expect to find the cause of death. If it proceeded from external injury, we cannot be at a loss where to begin ; but if from poison, the state of the alimentary canal should be our principal object."

The author then goes on to point out the proper mode of proceeding, and the particular objects of attention in an examination of the three great cavities of the body. The conclusions to be drawn from an anatomical inspection of the body, in cases of suspected poisoning, are always ambiguous, and by no means decisive. "As to the appearances of inflammation and gangrene, all who are conversant in dissections, know that they indicate the commencement of putrefaction as frequently as the effects of disease. There is hardly a stomach of those who die of short illness, that does not present suffused spots. The gastric juice often acts on the stomach as a solvent after death, and from this cause the stomach has been found eroded in different parts, as if acted on by some of the mineral poisons, which, by the ignorant may be taken for morbid appearances ; I, therefore, am decidedly of opinion, that unless arsenic is

found actually in the stomach, all the other marks of its having been administered, are extremely equivocal, and should be of weight in determining on a point of so much consequence ; and where, (should any mistake arise) the accused person may suffer an ignominious death."

On the subject of supposed infanticide, the author makes the following humane, and sensible observations.

" Women who are pregnant, without daring to avow their situation, are generally poor, deluded, credulous creatures, abandoned by the objects of their affection and cause of their misfortune ; often left to struggle with neglect, poverty, and disease. Under the pressure of those circumstances, they retire to some solitary place when in labour, and abandon themselves in despair to the event, without seeking any assistance. Delivery in those circumstances, is frequently attended with hemorrhage, either during the time, or immediately after ; the placenta is detached ; it frequently lies half in the vagina and os uteri ; for want of assistance, a deliquium is frequently induced, from terror and loss of blood ; and when the unfortunate woman recovers, perhaps, she finds the child dead ; and in this situation, surely her concealing the cause of her shame is an impulse of nature, and should not be adduced as a proof of guilt ; yet this very circumstance, (without allowing for the state of mind in those moments of terror and shame,) gives rise to suspicion, and often leads to an enquiry, that in the event, has consigned many an innocent woman to an ignominious death."

We cannot, however, agree with this author, that the experiment of the floating of the lungs in water "is not in the least to be relied on." When properly made in the manner pointed out by Dr. Beck of New York, in his inaugural dissertation, this experiment is of considerable value.

Male's Epitome of Juridical or Forensic Medicine. This work forms the most considerable, and we think, important portion of the volume before us. The author's object is, "to put into the hands of medical men a concise essay on poisons and their remedies, with a collection of those tests which are most to be relied on for ascertaining their presence ; also to

point out what is necessary to be attended to, in cases of sudden or violent death, that they may be prepared to state their evidence before a coroner, or in a court of justice, in a manner reputable to themselves, and satisfactory to the public."

Poisons. We are directed, when called to a person who is suspected to have been poisoned, to examine the food he has last taken, if any of it remain; and if no poison can be detected in it, its smell and taste should be noticed, and its effects upon the living system tested, by giving a portion of it to a dog. "But this is not to be depended upon, as what is poisonous to one animal, is not so to another." In proof of the uncertainty of such experiments, the following note is annexed by the Editor. "Dr. Nancrede and myself (T. C.) gave to a young dog about 20lbs. weight, first 16, then 32, then 52, then 150 grains of powdered white arsenic; the three first doses within thirty-five hours; then after three days 12 grs. of corrosive sublimate; then 30, in twenty-four hours after 12; each dose was fairly and fully taken: at the end of a fortnight the dog was well." Dr. Cooper recommends that such experiments should be made on fowls, rather than on dogs, or other animals.

Mineral poisons. The poisons treated of under this head are lead, copper, arsenic, mercury, antimony, silver, barytes, metallic fumes, and the mineral acids.

Lead. This is a most violent, and suddenly fatal poison, when received into the stomach in a large quantity, as is proved by the case of Michael Dillon, mentioned in the appendix of this volume. This person swallowed by mistake, one ounce of the sugar of lead, and died in half an hour afterwards. The best tests for the detection of lead are sulphuretted hydrogen, and hydro-sulphurets—they strike a blackish precipitate with a liquid containing lead. Dr. Cooper, in a note, adds; "Preparations of lead dissolved in water can be precipitated either by seltzer water, which forms a white carbonate of lead, or by chromate of potash which forms a yellow chromate of lead.—Chromate of potash also turns white lead yellow, it produces also a dense white precipitate with sulphuric acid, or Glauber's, or Epsom salts."

Copper. The preparations of this metal, most commonly used are the subacetite, or verdegrise ; the rust or green oxide; the sulphate, or blue vitriol, and the ammoniate of copper.—The nitrate of copper is more violent in its action than any other preparation of this metal. The tests most relied on for the detection of this metal are, pure ammonia, which strikes a beautiful blue colour with a liquor containing copper. But the one most to be depended on, is a piece of well polished iron, immersed for a short time in the liquid, which if copper be present, will receive a cupreous crust. The liquid, Dr. Cooper observes, “should be slightly acidulated for this purpose.”—A solution of copper is precipitated of a green colour by Fowler’s solution, and the chromate of potash turns sulphate of copper of an orange brown colour.

Arsenic. Much uncertainty has hitherto attended this subject ; such a variety of tests have, at different times, been proposed, and again rejected as deceptive, that the student is not a little perplexed, in his enquiries into this subject.

Various and contradictory remedies have been proposed as antidotes to the poisonous effects of arsenic—water impregnated with hydrogen, or a solution of hepar-sulphuris—charcoal, vinegar, the alkalies, &c. have been by different writers, recommended for their antidotal powers. The best plan of treatment, however, is to endeavour to remove the poison from the stomach, by exciting vomiting, and to exhibit large and frequent draughts of some mucilaginous diluents, such as milk, water gruel, solution of gum arabic, flax seed tea, &c.

The following tests are considered as the best, that have hitherto been proposed for the detection of this poison.

“1. Hot and fresh made lime water, added to a fluid containing arsenic, will precipitate 1.30 of a grain of metal dissolved in 100 grs. of water.

“2. Water saturated with sulphuretted hydrogen, is a delicate test, and produces an orange yellow precipitate. The same effect is produced by the addition of sulphuret of ammonia, or hydro-sulphuret of potash.

“ 3. Arsenic thrown on burning coal, gives white fumes of a garlic odour. It will only produce this effect when heated in contact with some combustible substance.” Dr. Jaiger says, that phosphorus and zinc emit the same smell; Dr. Cooper could never see the similarity.

4. Arsenic mixed with charcoal and oil, and heated between two polished plates of copper, bound together with wire, produces an indelible white stain on the copper. Mercury also leaves a stain, though not *indelible*.

“ 5. Boil a small portion of the suspected powder with a dilute solution of potash, in a few ounces of distilled water, in a clean Florence flask, and filter the solution; add to it a few drops of a solution of sulphate of copper; if arsenic is present, a yellowish green precipitate, called Scheele's green, will be formed.

“ 6. To a grain of the suspected powder, add the same quantity of charcoal, and one or two drops of oil; dry it gradually by a moderate heat, put them into a glass tube hermetically sealed at one end, which end must be coated with pipe-clay and sand dried; in that end place the mixture, and close the other closely with paper; place the coated end in a chafing-dish of burning charcoal; if arsenic be present, it will rise and line the under surface of the tube with a black brilliant coating; break the tube and lay a little of the reduced metal on hot charcoal, and the smell of garlic will be perceived; or place it between two plates of copper, and a white stain will be produced by heating it; less than a grain in weight will answer for this experiment, and it is certainly the most decisive test that we possess.”

“ 7. Dissolve the suspected powder in a few ounces of distilled water, by boiling it in a flask. To this add a few grains of sub-carbonate of potash or soda, agitating it with a glass rod. Touch the surface of this fluid with a stick of dry nitrate of silver, or lunar caustic; if arsenic be present, a beautiful yellow precipitate will instantly appear at the point of contact, and sink to the bottom.”

To these tests, Dr. Cooper has added another, which,

though we cannot estimate it as a very delicate test, we consider nevertheless of considerable value. It is the chromate of potash, which, when added to a small portion of white arsenic, produces with it, after a few hours standing, a green colour.

Mercury. Orfila says that the albumen or the white of eggs, is the only counter-poison to corrosive sublimate. "Intimately mixed with it, it decomposes it, forming a triple compound, consisting of albumen, muriatic acid, and calomel, which may be taken in considerable doses with impunity." The Editor, in a note, observes: "In the trials which I have made on dogs, with this poison so mixed, I have found, that even a few grains, well rubbed down with albumen, cause violent sickness, and exert considerable activity. I suspect Mr. Orfila is not, in all cases, good authority." The alkalies, as well as hepar-sulphuris and sulphuretted hydrogen, are, as is correctly observed by the Editor, clearly indicated.

There are not less than twelve tests mentioned for this poison, by Dr. Male. Corrosive sublimate may be known by its metallic and peculiarly astringent taste, by its solubility in alcohol, and by the red-orange coloured precipitate with chromate of potash. Nitrate of tin is a very delicate test; one drop only, is capable of detecting the three millionth part of a grain in solution. Albumen or the white of eggs, well mixed with water, is also a delicate test; a small quantity added to a solution of this salt causes an immediate milky turbidness; and a copious white flocculent precipitate gradually falls to the bottom, which consists of mercury and animal matter. This experiment should be made with cold water.

Infanticide. Child murder is so often the subject of forensic enquiry, and is generally connected with circumstances so peculiarly afflicting to humanity,—is so apt to be wrongfully imputed, and is attended with so many difficulties in its investigation, that it has long been considered as forming a most interesting department of forensic medicine. This part of Male's work is, we think, rather deficient. Much valuable matter has, however, been added upon this subject, by the

Editor, drawn chiefly from a most interesting dissertation on infanticide, by Dr. J. B. Beck, of New York,—a dissertation which is unquestionably the most complete, in all its parts, that we have ever seen on this subject. We concur, entirely, in opinion with Drs. Beck and Cooper, that the floating of the lungs in water, and their absolute weight, compared with the weight of the whole body, are indications of much more value than what is generally attached to them. The following directions are given, on this head, by Dr. Beck,—they are important, and ought never to be neglected in making the experiment with the lungs.

“1. After having examined the *general shape* of the thorax, and noticed the position and colour of the lungs in its cavity, they should be taken out together with the heart. They should then be subjected to a careful inspection, to determine if they are sound or diseased, or if they are at all affected by putrefaction; in which case they will furnish no satisfactory evidence.

“2. Particular attention should be paid to the *temperature* of the water in which the lungs are to be immersed. The reason of this is obvious, when it is recollected that the specific gravity of water varies with its temperature; thus, for instance, water at 100° is lighter than water at 60°, and still lighter than at 40°. Besides, if the water be too hot, it will have the effect of expanding the lungs, and thus favour their floating, especially when there already exists a slight tendency to putrefaction. If, on the contrary, its temperature be too low, the air will thus be expelled. The temperature of the water should, therefore, be regulated by that of the surrounding air. The water must not be impregnated with salt; for this will increase its specific gravity.

“3. The lungs, together with the heart, should then be placed in the water, and if they both float, it is a proof of complete and effectual respiration.

“4. If the lungs sink with the heart, or if the floating is only partial, it is then proper to separate them, and repeat the experiment upon the lungs alone; observing whether the whole

float, or if they sink, whether any part shows a tendency to float; if so,

"5. The two lobes should then be separated, and the experiment repeated upon each, noticing the difference, if any, between them. If only one floats, see if it is the right one."*

"6. If both lobes sink, or float but imperfectly, they should be cut into a number of pieces, taking care not to confound the fragments of one lobe with those of the other; and upon each of these the same experiment should be instituted.

"7. While cutting the lungs it should be marked if there be any crepitation; if the vessels are charged with blood; and if there be any traces of disease."

After having performed these different processes, the conclusions to be drawn from them are evident. If the entire lungs, as well as all its divisions, remain on the surface of the fluid, it is a proof that the infant enjoyed perfect respiration; if only the right lung or its pieces float, the respiration must have been less perfect; if some pieces only float, whilst the greater number sink, it proves that the child lived with pain, or that the lungs were diseased, or that the partial floating was owing to artificial inflation. If all the pieces sink, the inference is decisive, that the child never respired."

Dr. Male does not put much reliance on Ploucquet's test, of the absolute weight of the lungs, compared with that of the body. Dr. Beck, however, considers it of much value. Ploucquet, from a great number of experiments which he made on this subject, drew the conclusion, that the weight of the lungs previously to respiration, is one seventieth of the weight of the whole body, whilst after that process, it amounts to one thirty-fifth. Although the weight of the lungs cannot be supposed to possess this precise relation in every case with the whole body, still there must be always such an approximation to it, as, when taken in connection with the results to be drawn

* Mr. Portal has made several experiments, which prove that the *right* lung receives air much sooner than the left.

from the *floating* of the lungs, to enable us to form an opinion amounting almost to certainty.

The author then goes on to treat of the following subjects: Abortion and concealed Birth, Pretended Delivery, Retarded Delivery, Rape, Hanging and Strangulation, Drowning, Dangerous Inebriety, Insanity, Pretended Diseases, Imputed Diseases, Apparent Death, Impotence.

Haslam on Insanity. We have already taken up so much room in speaking of this volume, that we feel ourselves obliged to dismiss the analysis of this essay. It may, however, be remarked in a general way, that it contains principles and directions relative to this important subject, which are of much value, and which ought to be well understood by every one who pretends to give evidence on cases of insanity in a court of justice.

The appendix contains, 1. Erskine's speech for James Hadfield, indicted for shooting at the king. 2. An abstract of a report of the trial of Abraham Kessler, indicted for poisoning his wife with white arsenic and laudanum, and A Memoir on Chromate of Potash as a test for detecting arsenic, copper, and corrosive sublimate, by the Editor.

The following directions are given by the Editor, for making the experiments with the chromate of potash.

"Take a conical glass, or a watch glass; put on it the sixteenth part, for instance, of a grain of white arsenic, or any portion of a grain that may be distinctly visible by the naked eye; on another as much corrosive sublimate, on another as much sulphate of copper; drop on each, one or two small drops of chromate of potash, whereof the excess of alkali has been neutralized by nitric or acetic acid. In a minute the copper will give a distinct brown tint; the corrosive sublimate an orange; the arsenic, after three hours standing, a decided green."

We have tried this test, and are of opinion that it is of considerable value. We do not, however, think, that it is a very delicate test for corrosive sublimate. The colour which it strikes with this poison, is so like that of the chromate itself,

that there is, we apprehend, some danger of deception. Upon the whole, however, the chromate of potash forms an important test, and more especially, we think, for the detection of arsenic.

The *legal* part of this work consists of,

1. A discussion of the period of gestation, as settled by writers on the law of England, by the code Napoleon, and by analogous experiments from a report of M. Cuvier. This discussion consists of the notes to Hargrave and Butler's edition of Coke upon Littleton, the best authority known to the English writers; a translation of the passage relating to this subject in the code Napoleon, and the extract from Cuvier's report.

2. A very useful and accurate abridgment of the law relating to insanity, chiefly from *Collinson's* treatise on the subject, in two large volumes 8vo., for which, the present digest may, in most cases of reference serve as a sufficient and convenient substitute. This is a very useful present to the profession, inasmuch as, the compilation of Collinson was very little known in this country; and almost every point on cases of insanity, is distinctly stated in judge Cooper's abridgment, with accurate references to all the leading authorities.

We observe also a very useful addition made in this work, to Haslam's *Treatise on Insanity*, by the marginal notes not contained in the original work.

3. Chitty's late *Treatise on Criminal Law*, has brought into permanent notice, Lord Erskine's famous defence of James Hadfield, indicted for shooting at the king in Drury-Lane theatre, 26th April, 1800. As the Court of King's Bench on that trial, acquiesced in the principles laid down by Lord Erskine in his defence, those principles have become part of the law in similar cases. Judge Cooper, therefore, has with great propriety inserted that defence, which before was not to be found in any purely professional book, medical or legal.

4. A brief but satisfactory explanation of the principles that regulate indictments for nuisance. We cordially agree

with the author, in the statement he has made of nuisances, that call for legal interposition. There is no method of procuring an amelioration in these respects, but by bringing the subject repeatedly before the public, for open examination and discussion.

In fact, the most useful part of the book, so far as the present author (judge Cooper) is concerned in it, is the legal additions which he has made to the tracts republished. They are additions which none but a lawyer well acquainted with the theory and practice of his profession could make ; and as this is the first time that a book on medical jurisprudence has been published in the English language by a gentleman of that profession, it bids fair to receive (as it well merits) the patronage of those, for whose particular use the additions were intended.

We observed the name of Dr. Majendie, spelt Majendia ; and in judge Cooper's memoir on the chemical symptoms attendant on yellow fever, (p. 447) in prescribing bleeding in an early stage of that disorder, four *quarts* are put instead of four *pounds*, which we distinctly remember was the expression, when the paper was read at the Philosophical Society ; and so it manifestly ought to be. The mistake, indeed, is of no great consequence, for the rule should be what either practice would in fact amount to, *usque ad deliquium*.

We have no hesitation in saying, that for the legal notes to this book, the profession will feel themselves much indebted to this able and laborious compiler ; whose professional standing and character, well ensures weight to the doctrines advanced, and extend a knowledge of the general subject, to a class of readers, who would hardly otherwise have paid attention to it.

FOREIGN PAPERS.

Observations with Cases illustrative of the sedative and febrifuge Powers of Emetic Tartar. By Wm. Balfour, M. D. 8vo. pp. 92. Edinb. 1817.

[From the London Medical and Physical Journal, for Nov. 1818.]

THE perusal of the above work has afforded us no common degree of pleasure: we have received useful information from the facts therein related, and feel gratified that so valuable a remedy has engaged the attention of a physician so well able to demonstrate its importance, and whose authority will doubtless obtain for it the consideration it merits.

One of the greatest bars to improvement in the practice of medicine, the author observes, is the supine belief that nothing can be added to our knowledge of the qualities of those remedies which have been long in use. Hence it is that the greater number of those who are stimulated by the noble ambition of distinguishing themselves as the benefactors of mankind, direct their efforts to the discovery of *new* remedies, instead of instituting experiments with those whose medicinal powers are demonstrated.

It was observed by Bacon, that knowledge more quickly springs from absolute ignorance than from error; so we are better acquainted with the qualities of several substances but recently employed as medicines, than with those which have been familiar to every practitioner from time immemorial. Dr. Balfour justly remarks, that the most skilful practitioners prescribe the fewest medicines; and that it is very probable, were the powers of those we already possess fully understood, that the tenth part of them would be more than sufficient for

the purposes of practice. Physicians would then be like dexterous surgeons, who depend more on their own management and skill than on number of instruments.

EMETIC TARTAR, the author observes, has been in use ever since the introduction of chemical medicines into practice, and every author has been loud in its praise. It is very questionable, however, that its employment has been as universal as the encomiums on it would indicate. Several of the most eminent practitioners in Edinburgh, whom he has been in the habit of meeting for many years, never once hinted at the employment of antimonials, in even the most acute inflammatory diseases. On conversing with his medical friends on the subject, those who were in the habit of using it acknowledged that, though they knew Emetic Tartar to be an excellent medicine, in *nauseating doses*, as promoting perspiration without heating the system, yet they never entertained the view he has given of it. "The sedative and febrifuge powers of Emetic Tartar" was a phrase quite new to them.

"With Dr. Cullen, (the author continues,) Emetic Tartar was a favourite remedy. This appears from his First Lines. I have been told, but I do not believe it, that he carried this medicine an unjustifiable length. The only subject of regret, however, is his recommending it, wherever he speaks of it, in nauseating doses. Had not this been the case, the authority of so great a man must infallibly have rendered the employment of it much more general than it has yet been. Nausea is an unpleasant feeling; nor is it easy to induce patients to swallow the medicine a second time, which is sure to produce it. Practitioners, too, who suffer themselves to be influenced chiefly by appearances, would naturally conclude against a remedy which, unless exhibited with judgment and caution, is violent in its operation, and which, in the days of Dr. Cullen, was comparatively new. Hence, together with the aversion manifested to it by a great living character, the almost total neglect Emetic Tartar has experienced in this country. Even at this day, it is in nauseating doses only the remedy is recommended, and in constitutional derangement alone; or where

local affection is so considerable as to give reason to apprehend constitutional derangement. I trust, however, to be able to show that Emetic Tartar is eminently efficacious in chronic, as well as in acute, disorders; in topical affections, as well as in general derangement; and that its efficacy, in either case, is not confined to *nauseating doses*. Nay, more, I will demonstrate that, in many cases of local inflammation, accompanied with violent re-action, blood-letting to one-third of the extent generally practised, is not necessary to the cure; that a speedy and perfect cure can be obtained, with the loss of so moderate a quantity of blood as to warrant the conclusion that it might be safely omitted altogether, even in circumstances in which it is generally considered the only means of saving the patient."

The beneficial effects of blood-letting in many diseases, Dr. Balfour remarks, depend more on the relaxation of the system induced, than the quantity of fluid abstracted: if, then, this effect can be produced by other means, will not a mighty object be gained? He then observes,

"If such a thing is possible, why should practitioners continue to abstract sixty, a hundred, two hundred, ounces of blood from a person labouring under pneumonia? A recovery after such practice is, in many instances, an escape, not a cure! Is it consistent with any principle that life should be reduced to the last ebb, without regard to age, habit, or constitution, on account of the recurrence of pain in the chest and difficulty of breathing, when we possess the means of equalizing the circulation, without producing corresponding debility? The Diathesis Phlogistica of authors, or the preternaturally-increased tone or contractibility of the arterial system,—sometimes induced by any considerable local inflammation, at others the effect of general causes, and always tending to congestion,—is most readily and effectually taken off by the relaxing power of blood letting; which ought, therefore, in pressing circumstances, to be first employed. What I contend for is, there is no necessity, in even the most urgent case, for carrying the lancet the length of "giving the patient the chance;" that is, of nearly bleeding him to death in order to save his life."

Dr. Balfour, supposing that, in inflammatory diseases, the nervous system is primarily effected, of which the arterial excitement is the consequence, considers that the attempt to remove this without the aid of those remedies which more directly affect the nervous system, is not the most scientific mode of proceeding. "When re-action has taken place before the physician is called in, blood-letting may certainly be necessary, because increased arterial action, at first an effect, now acts as a cause; but certainly attention is even then due to the primary affection, and, if due attention is paid to it, its effects will be more easily controlled. The advocates for the unlimited use of the lancet, however, follow a more summary method. They cure their patients in the same way the Romans gave peace to the countries they invaded; and that was, by making the blood of the inhabitants to flow till they became perfectly passive.

Several cases are then related of the different diseases in which the powerful effects of this remedy have been evinced; of which we shall transcribe some of the most important, referring our readers to the work itself for more detailed information in this respect, and for the original and judicious reflections of the author on the diseases to which it is applicable, and its mode of action.

"CASE 1.—Mr. S. aged 30, was attacked, on the 7th October, 1817, with pneumonia, for which he was bled to sixty ounces in three successive days; and, on the 15th, again to twenty ounces. Having got out in about three weeks after this, he was again seized with pain in the breast and difficulty of breathing, accompanied with much higher fever than in the first attack. He was bled to twenty-six ounces, with relief at the time; but, in twenty-four hours after, all the symptoms returned with increased violence. Afraid of the patient's strength failing, as his feet were now become œdematous, I was unwilling to carry blood-letting any farther. I therefore ordered an ounce of a solution of two grains of Emetic Tartar in six ounces of water, to be given every hour. The third dose produced sickness, and with it relief from pain. In four days

the patient was free from complaint in his chest. About the middle of February he had another attack of pneumonia, which again yielded to Emetic Tartar, without blood-letting being premised. Had I, in this instance, continued to trust to the lancet for subduing the inflammatory action that existed, thoracic effusion would have been induced, and I would infallibly have killed my patient.

“CASE 3.—Mrs. B. aged 55, a thin, delicate, complaining woman, was attacked in January last with pain in the chest, difficulty of breathing, and fever. She had struggled with her complaints some days before I was called. I found her extremely weak, pain in the breast fixed, severe, and impeding respiration to a distressing degree; pulse 100, small and hard. She complained also of being drenched in sweat every night, but especially towards morning, and on the head and superior parts of the body chiefly. I ordered her a solution of four grains of Emetic Tartar in eight ounces of water. Of this she was to take a table spoonful four times in the twenty-four hours, unless such quantity sickened her; in which case the dose was to be diminished, so as not to occasion nausea. In five days the pain in the breast was removed, and she could make a full inspiration. Debility and night-sweats were now her only complaints. For these I had recourse to nitrate of silver in the form of pill,—a fourth of a grain a dose, three times a-day. The power of this medicine, in checking the sweating, was almost immediately felt, and the patient gained strength daily. In ten days from the time I was called in, I took leave of this lady, restored to a greater degree of health and strength than she had for a long time enjoyed.

“CASE 8.—Mr. W. was attacked on the 17th December, 1817, early in the morning, with pain in the great toe, at the instep, reaching through to the sole, and round the outer ankle of the right foot. I was called to him in the course of the day, and found the parts swelled, excruciatingly pained, and of a fiery red. Pulse 80. From my patient having had several attacks of gout before, there was no room to doubt that his present complaint was of the same nature. I proposed to bathe

the parts with spirits and water of a temperature with that of the parts ; a practice I followed, particularly in the case of Sir Thomas Troubridge in 1815, before Dr. Scudamore published on gout. To this the patient objected, on the score of his having been treated in the same way once before, when he had a slow recovery. I applied compression with my hand, dipped in flour, for a few minutes, which he bore very well, though friction would have made him mad. Ordered a solution of two grains of Emetic Tartar in six ounces of water, of which he was directed to take an ounce every two hours.

“ Dec. 18.—Passed a very restless night. Pulse 96, and hard, with stitch in the right side, increased by coughing or a full inspiration. Had taken very little of his medicine. I now informed him that, if he did not take his medicine as prescribed, I would be under the necessity of bleeding him freely, by which he might lay his account with being much longer confined than he otherwise would be. This had the desired effect, as he regretted absence from business much. This day he took his medicine steadily, with the addition of two drachms of compound powder of jalap. In the evening I found his pulse much fuller and softer, with an agreeable diaphoresis all over the body ; stitch in the side declining, and the purgative had operated briskly.—Dec. 19th. Passed the night very well ; no uneasiness from the foot ; redness and swelling declining ; pulse 86, full and soft. Continue the antimonial mixture in quantity to maintain a softness of the skin.—Dec. 20th. Pulse natural ; stitch gone ; bowels regular. But the patient cannot point his foot to the ground. Applied percussion gently all over the sole, and then a bandage. In the evening could walk a little. Repeated the operation and bandage. Next day, 21st, could walk pretty well. On the 22d, walked perfectly well.

“ On the 25th, my patient sent for me to his counting-room, when he told me his right foot was as bad as his left had been, and that he could not point it to the ground, were he to be made proprietor of Edinburgh for so doing. Admitted he had got a fresh cold ; pulse rising and hard. Applied percussion to the sole of the foot for some minutes, when the patient was

immediately enabled to walk. Gave him a slightly-nauseating dose of his antimonial medicine. He dined in his counting-room, and walked home at eight o'clock. Passed an uncomfortable night. Next day resumed his antimonial medicine, none of which he had taken during the night. This day he took six drachms of sulphas. magnes. also.—27th. Was free from complaint, with the exception of being slightly lame. Two more doses, therefore, of percussion, exhibited on the morning and evening of this day, completed the cure; and the patient went abroad on the 28th in perfect good health, which he has enjoyed uninterruptedly ever since.

“CASE 10.—Captain B. applied to me, on the 12th December last, for a rheumatic affection in his right shoulder, and left elbow-joint. He could neither put on nor off his coat without aid; and was deprived of sleep by the pain in the elbow attacking him, in the night, in paroxysms of such severity as to make him cry out. In ten minutes I gave freedom of motion in the shoulder; and the pain in the elbow was coerced in a considerable degree by a bandage, but not removed. On the 13th he did not go abroad, and when I visited him at 3 P. M. found a slight degree of fever present. Two grains of Emetic Tartar in six ounces of water were ordered; of this the patient was directed to take a table spoonful every hour, till nausea supervened.—14th. Had taken most of his medicine, without nausea or any sensible perspiration. Slept well, having had but one attack of pain in the night, which was instantly checked by percussion.—15th, 16th. Sleeps without interruption, and is free from complaint.

“CASE 11.—About the middle of January, William Paterson, a poor lad, aged 19, came to my house at nine o'clock at night, with one arm of a ragged coat on and another off, complaining most grievously of a pain in his elbow-joint. There was much swelling round the joint, and a considerable way both above and below it. I handled the parts as the patient could suffer me, but had no bandage to apply. In a few minutes he began crying like a child. I asked if I had hurt him? He assured me not; but that he was sure a snow-shower was

falling, for the pain was always much exasperated by such an occurrence. I looked out, and found his conjecture correct. I gave him three ounces of antimonial mixture, in which was a grain and a half of Emetic Tartar; directing the one half to be taken as soon as the patient got home, and the other half in an hour after. Next morning it was reported to me, he slept all night, a few minutes only excepted, when he experienced a slight paroxysm; and I ordered the medicine to be continued. On the third day after his applying to me I visited the patient, as the physician, whose care he was under before he came to me, had not, he said, called on him for some time. I found him lying at ease; the swelling reduced two-thirds; the pain, even to the touch, entirely gone, except in a single point in the bend of the arm. Six grains of Emetic Tartar, in twelve ounces of water, was the amount of the medicine taken. It produced not the slightest nausea, nor any observable increase of perspiration, for thirty-six hours. It then began to operate powerfully on the skin; but, before this took place, pain was completely subdued. Indeed, he had but one return of pain, and for a few minutes only, after he began the medicine. I applied compression to the pained point, first with my hand, and then with a bandage,—including the whole of the parts that had been swelled. Two more operations gave complete motion to the joint, and the patient was at his work in a week.

“CASE 14.—A gentleman contracted gonorrhœa, in which the inflammation run pretty high, and the discharge was copious. Circumstances rendering it necessary to keep up appearances, he could not confine himself. I advised abstemiousness at table, ease, cleanliness, and a saline aperient occasionally. In a few days he got hernia humoralis. The affection had reached the scrotum, which had become red by the time the circumstance was communicated to me. I ordered suspension, and a solution of Emetic Tartar in water, of the strength of half a grain to the ounce. Of this mixture he took an ounce every two or three hours, and the progress of the complaint was immediately arrested. The cure, indeed, of the hernia humoralis was completed in one day. The medicine

was continued in small quantity for some time, but not more than six grains of Emetic Tartar were taken, and there was no return of the complaint.

"CASE 15.—A young gentleman, having contracted gonorrhœa, was greatly alarmed lest the circumstance should come to the knowledge of his friends; and therefore insisted on having an injection, that the cure might be the more speedy. In a few days the discharge had nearly ceased, when the patient was seized with pain and swelling in one of his testes. I prescribed Emetic Tartar in alterative doses, as the patient could not be confined. The pain soon abated, but was not altogether removed, on account of the extreme caution observed in taking the medicine, lest sickness should be induced by it. I remonstrated with him on account of his timidity, and he increased the dose till slight nausea was only once produced. He abandoned the medicine, and I abandoned my patient. He then promised compliance, resumed the medicine for a few days, and the cure was completed.

"CASE 21.—On the second of April, a young gentleman consulted me for a constant uneasiness he felt about the region of the bladder, and which was increased by the accumulation of water. He made water with difficulty and increased pain. Dated his complaint from exposure, some time before, to cold and wet. I was satisfied, from the *nisus* requisite in expelling the urine, that the neck of the bladder was principally affected. I put him upon Emetic Tartar, with little or no effect for some days. At length the medicine began to operate; not, however, by any other sensible effect than freedom from pain and facility of making water. Two dozen of pills, each containing a fourth of a grain of Emetic Tartar, effected a complete cure."

The author concludes with observing, "From the facts narrated, it may be fairly inferred, I think, that Emetic Tartar must be highly beneficial in every genus and species of inflammation, whether chronic or acute; those affections excepted, in which the stomach is generally so irritable that it is not probable the medicine could be retained in sufficient quantity to have much effect on the circulation. We have seen its ef-

fects in symptomatic fever, induced by local injury,—in several severe cases of pneumonia,—in inflammatory gout,—in rheumatism, chronic and acute,—in cynanche tonsillaris,—in idiopathic fever,—in hernia humoralis,—in chronic inflammation of the bladder,—in inflammation of the mamma,—in ophthalmia—in chronic hepatitis,—in nephritis: it certainly is not carrying analogy too far to anticipate similar beneficial effects from it in other kinds of inflammation, and in inflammatory affections of other organs.”

In a private communication we have been favoured with from Dr. Balfour, he states that, from experiments he has already made, and is now prosecuting, he is confident that Emetic Tartar, judiciously exhibited, will prevent scrophulous inflammation and ulceration of the lymphatic glands; he therefore concludes, that it will prove not only a cure, but a preventive, of pulmonary consumption.

Case of Hydrocephalus successfully treated by the removal of the water by operation. By James Vose, M. D. of Liverpool.

[From the Medico-Chirurgical Transactions, London, Vol. IX.]

ON the 11th of July last, I was requested by Dr. Formby, my friend and colleague at the Liverpool General Dispensary, to see a case of advanced Hydrocephalus with him. The patient was an infant of seven weeks old, whose head was enlarged by the accumulated fluid to between two and three times its natural size. But little ossification seemed to have taken place since the birth of the child, shortly after which the mother noticed the preternatural and increasing size of the head. The enlargement had been progressive from that time, and the head had become so transparent, that when held between the eye and the light, it was not unaptly compared to a paper lantern.

The child at the time I visited it with Dr. Formby, being free from any additional symptoms indicating a serious

affection of the general health, with the exception of a slight derangement of the bowels and occasional convulsions, we thought this a favourable case for the experiment of gradually discharging the water from the head by puncture. The operation was accordingly performed the next day by means of a couching needle, of the size and shape formerly in use. Three ounces and five drachms of limpid fluid were discharged, and the opening was closed with adhesive plaster, a roller being at the same time applied round the head. After the discharge of this small quantity of water, the head lost its tension and globular form, and became so flaccid as to allow the water to gravitate backwards while the child was laid upon its mother's knee, giving to the loose integuments the form of a pendulous bag. About an equal quantity of water dribbled from the orifice after the operation, and the child sunk so extremely low as to create the greatest alarm in the mind of the mother, and induce her to apply to the Dispensary for assistance at midnight. The child, however, revived without the aid of medicine, and the water again accumulating, the head became as tense as before in a very few days. On the 29th of July the operation was repeated. I was less cautious in the mode of the puncture and the quantity of fluid abstracted on this occasion: the operation was performed with the curved and pointed bistoury of my pocket case, and five ounces of fluid were evacuated.

No unpleasant consequences followed, and the head having regained its former size, it was a third time punctured on the 20th of August. Eight ounces of the contained fluid were now discharged, and no constitutional disturbance succeeded to the operation.

The head was punctured for the last time on the 29th of August, and a small grooved director being introduced into the orifice, twelve ounces of the fluid were drawn in a continued stream.

The head on this occasion became so flaccid and shapeless, that the mother was shocked at its appearance, and fearful of the consequences of raising the child from her knee. No derangement of the health followed this fourth operation.

It was observed that between the first and second operation, the relaxed state of the integuments had allowed the process of ossification to advance in a perceptible degree. This was still more remarkable after each of the succeeding operations; and before the last, the sagittal suture, which had at the commencement of the treatment divided the frontal bone as low as the nose by a wide chasm, was entirely obliterated at this part, by the union of the two opposite portions of the bone.

A short time after the last operation, the child was perceived to discharge a considerable quantity of water by the bowels;—this at first took place with the natural motions, but afterwards the water, resembling in its sensible qualities that discharged from the head, was evacuated alone, and continued to be so for four or five days. The same low state as followed the first puncture of the head, took place on the second day of this discharge from the bowels, and it was particularly remarked, that a diminution of the size of the head had corresponded with the quantity of water thus evacuated. Ossification now advanced with great rapidity, and the bones of the head are at present nearly as complete as is usual in a healthy child of similar age. Our little patient has besides improved in health, size, and vigour; its appetite and digestion are good; and what has afforded us particular interest, not a single convulsion has occurred since the first operation.

My friend Dr. Trail, who unites to very various scientific acquirements much skill in practical chemistry, examined the water discharged from the head at each operation, and found it at first to contain scarcely any trace of albumen; he considered it to possess more of the characters of simply diluted mucus. After the second and third operations, the presence of albumen was more sensible.

The medical treatment of the child was restricted to the preservation of the action of the bowels by small doses of hydrag. cum creta.

Liverpool, Nov. 27th, 1817.

On the Use of the Actual Cautery as a Remedy for the Cure of Diseases. By J. P. Maunoir, Professor of Surgery in the University of Geneva. Read June 9, 1818.

[From the Medico-Chirurgical Transactions, London, 1818.]

THE application of fire to the human body, was looked upon by the ancients as a powerful remedy in a numerous class of diseases ; while in the present day it is so totally disused in England, that the proposal to employ it would excite not merely astonishment but alarm. The labours of Pouteau, Percy, Larrey, who have written so fully on this subject, have been in vain : even were their works to reach this country, they would be received with distrust, and read by a few surgeons only. But none would take upon himself to become the advocate of Cautery, either in theory or practice, however he may regret its having fallen into disuse in modern surgery. The chief reasons for its having been abandoned in England, appear to be, in the first place, the abuse made of fire in the treatment of local gout ; and in the second, the anathema fulminated against it by the celebrated Sharp.

In the treatment of local gout, the parts affected were relieved, and to all appearance cured, by the action of fire ; but in a short time afterwards, the stomach, the lungs, or some other organic part of vital importance, became the seat of a disease resembling the gout, which usually proved fatal.

With respect to the influence which Mr. Sharp had in abolishing Cautery, he was a man so justly looked up to as an oracle by his pupils and cotemporaries, that every thing he wrote or said was alike received by them as having the stamp of infallibility ; and all inquiry into the justice of his condemnations was deemed unnecessary. He had no doubt witnessed an imprudent employment or abuse of the Actual Cautery, and instead of publishing the nature of the cases, in which he

considered it attended with danger, he proscribed the practice altogether. The following are his words: "When scarification and the other remedies fail, it has been operative in all ages, from the time of Hippocrates down to the beginning of this century, to cauterize the eschar; the memorable aphorism* he left behind him relative to the officinary of fire, brought the Cautery into use upon almost every occasion. In mortifications, they believed that the putrefying principle or venom was extracted with the juices that were dried up by the hot iron. They thought likewise that the separation of the sloughs was exceedingly assisted by this process; and what was more important, they imagined that the life of the part was quickened, by drawing the spirits to it, and freeing it of all humidities.

"I have here used the language of all writers upon this subject, and we have hardly in surgery a more extraordinary instance of human fallibility than this; for after an uninterrupted practice of above two thousand years, this celebrated remedy, whose virtues were supposed to be eminent both from reason and experience, is at length fallen into disrepute, and never employed for stopping a gangrene.

"It has also met with the same fate in regard to many other distempers for which it was formerly deemed a kind of specific; but it has lost its ground gradually. When it was abolished from among the remedies for gangrene, it was still reserved for cancerous tumours and excrescences, from a persuasion that it would kill any lurking venom near the cancer. And now that it is no longer used for this disorder, it continues to be practised upon carious bones, in order to promote exfoliation; but I think upon no better ground than in the other case. So that in all probability, it will by and by be universally discarded even for the exfoliation of bones. In England it is already done; but for the final removal of these prejudices we must allow time."

He says elsewhere: "However, if it be only uncertain whether the Actual Cautery is beneficial or no, the cruelty

* Quæ medicamentis non sanantur, ferro sanantur; quæ ferro non sanantur, igne sanantur; quæ igne non sanantur, illa existimare oportet insanabilia.

that attends the use of it should entirely banish it out of practice."

While Sharp was condemning Actual Cautery in London, Dionis was doing the same in Paris. In showing his auditors the various forms of cauterizing irons used by the ancients, he said, "I know no person who dares employ them now, and I only show them to inspire you with more horror of their use."

It is remarkable, that in the *Philosophical Transactions*, destined to be a lasting monument to posterity of the progress of mankind in scientific knowledge, there should not be one single observation on the Actual Cautery.

Mr. Cooper, in his *Surgical Dictionary*, has followed the example of Sharp. He so positively condemns the use of fire as not even to have mentioned it in the article on the bite of a mad dog.

The inference intended to be conveyed is, that the use of fire in surgery was the consequence of a false theory, founded on a barbarous prejudice; that its application was not only useless but cruel, and attended with danger. But when we consider that this prejudice lasted two thousand years; that it exists still in the greatest part of the world; that the famous Hippocrates has extolled fire as one of the most efficacious remedies; that after him, Celsus, Albucasis, Marcus Aurelius Severinus, Ambroise Parry, &c. have spoken of it as a truly useful means in surgery; we must feel a wish to take a retrospective view of its merits, and endeavour to ascertain to what causes may be attributed the veneration in which it was held by the ancients, and for what reasons the use of fire had grown obsolete for so long a series of years on the continent, and why it continues to this day to be so in Great Britain.

We cannot doubt but that the admiration in which the practice was held was founded on its success. We can have little doubt either, that the progress made in surgery has caused it to be rejected in cases where it was improperly used, and for which simpler means have been employed, and simpler operations substituted. The limits of this memoir will not admit even of a cursory view of the various ways of employ-

ing Caution, of the different diseases that have been treated by fire, or of the circumstances where its application would be proper, or where it would be reprehensible : my aim is only to prove that Sharp and Dionis went such lengths in their prescription of fire, that in aiming at the destruction of a prejudice, they have established one of an opposite nature—*in vitium ducit culpæ fuga*." Any one who has overcome this prejudice, and is desirous of further particulars, may satisfy his curiosity by looking into Mr. Percy's *Pyrotechnia Chirurgicale*, which appears to me to be a classical work eminently useful and even indispensable, and which is still among the desiderata in English surgery. A translation of it would be the signal in this country to light up anew on the altar of the god of medicine, that sacred fire which has been so long extinguished.

I shall now merely offer to your notice a few cases where, when every other remedy had failed, I have tried the effects of Caution with the fullest success.

In 1798, a young Savoyard, tall, well made, and healthy in other respects, had been for many years afflicted with local scrofula. A hard, red string of glands suppurating in seven or eight places, extended along the lower jaw and upper part of the throat from ear to ear, or from one mastoid process and parotid gland to that on the other side. The disease had been taken in its infancy, and many remedies tried to no effect. I advised artificial sea-baths, washing with cold water, nitrate of silver, mercurial ointments, &c. gave interiorly bark, iron, muriate of lime, and prescribed exercise and a strengthening diet: the disease did not augment, but yet was stationary. When one fistula closed, another opened near it. The patient was equally persevering with myself in giving to each remedy a fair trial. Fatigued at last by their inutility, I proposed trying the effect of Actual Caution, to which he immediately assented.

I then burnt with a cauterizing iron, heated to the greatest degree, the fistulas and ulcerated glands. The difference in their appearance, after the sloughs had fallen, was astonishing. A complete cicatrization of a part of the ulcers followed shortly after; others resisted this first application, and resumed their

bad appearance: a second application of fire determined their cure. The enlargement of the glands totally disappeared about six months after the cicatrization of the ulcers.

About the same time I attended a countryman of Vallorbe, a village situated on the Jura in the Canton de Vaux. He was from twenty-five to twenty-eight years old. For eighteen months past his left thigh had been dissected by a number of fistulæ, in consequence of abscesses by congestion that had been opened and treated in the most ordinary manner. These sinuous ulcers were situated between the muscles and the skin: some of them extended to a great length between two muscles. I shall pass over the history of their treatment, with sulphureous baths, incisions, stimulant injections, &c. Suffice it to say, that fire succeeded when every other remedy had failed. In consequence of the frequent application of the olive-shaped Cautery, not only the fistulæ were cicatrized, but the thigh and leg so far recovered their strength as to be nearly on a par with the other limb.

Pouteau has frequently observed, that at the very instant the moxa was applied, the weakened parts of the body seemed to become invigorated.

One of the motives for rejecting Cautery is an idea of its being painful to excess. Were this supposition well founded, ought we even then to renounce it when no other remedy afforded relief? But if not totally unfounded, it is at least much exaggerated, as the following narrative will evince.

Some years ago, a lad named Tulou, when without his coat, was bitten in the hand and arm by a mad dog: he had eight or ten wounds. I assured his parents that burning was the only means of saving his life. The boy positively refused to submit, declaring that he had rather run the risk of dying, than undergo so cruel an operation. Having full authority from the father and mother, I sent for four men who tied the rebellious boy to a chair in spite of his cries, and held his hand and arm extended. He still continued to scream aloud, and made the utmost efforts to elude the operation; but he had no sooner felt the burning iron on one of the wounds, than he stopped, and

said quickly, "Is that all? untie me, and set me free, I will not move;" and bore, in fact, with perfect serenity, the repeated application of Actual Cautery, desiring me when I had finished, to examine carefully if no scratch remained. It is scarcely necessary to say, that this young man had not the least symptom of hydrophobia afterwards. Indeed, I never had any unfortunate case from the bite of a mad dog, though I have attended a considerable number of persons bitten, and constantly employed burning irons heated to such a degree, as to produce by their application, immediate slough over the whole of that part where the tooth of the animal had reached.

Mr. Baillif, aged fifty years, employed in the salt-petre mines, had, I know not how long before I attended him, the whole of the membrane lining the cheeks in a state of chronic enlargement. The teeth of the upper and lower jaw were buried in the gums. The roof of the mouth was nearly on a level with the upper edge of the teeth. This enlargement extended itself to the pharynx exclusively. Mastication and deglutition were alike difficult and painful. This swelling was neither of a soft nor bleeding kind; it partook of the nature of a scirrhus tumour, rather than that produced by a fungus or scorbutic disposition. The patient had gone through a course of remedies at Lyons, and been attended several months at Geneva by Dr. Peschier, who brought him to me in 1813. My proposal of employing Actual Cautery, was accepted without hesitation, and the operation performed at three different times, at the distance of a fortnight, in the following manner.*

I drew the red hot iron rapidly over the gums, so as to produce instantaneously a deep rut, wherever they had passed. Each operation required the application of the iron at least twenty different times. For which purpose half a dozen olive-irons, about the size of a tonquin bean, were ready at the same instant, that they might never be used but with the greatest degree of heat. The patient continued so tranquil under the operation, that a stander-by must have concluded it was scarcely

* The carious teeth and roots were drawn two or three weeks before the operation, without effecting the least change in the disease.

painful. The usual falling off of the sloughs, and the abundant suppuration which followed, terminated in a complete cure of the disease.

Mr. P., an English gentleman, formerly a surgeon, had for the last fifteen years an ulcer on the lower lip, which I shall not hazard to call cancerous, but which had a very alarming appearance, with hard and elevated edges. He had been attended during several years in London by surgeons of the highest merit. The ulcer had sometimes appeared to be getting better, but had never entirely healed. When I first saw Mr. P. it extended about half an inch in height, and a full inch across the red part of the lip, the tissue did not appear to be altered beyond the ulcer, and the lip preserved its natural suppleness. In spite of the long standing of this disease, and the profound grief it occasioned to the patient, his constitution appeared in other respects perfectly sound, from which I concluded it to be a local and not a constitutional disease.

After consulting with my brother, we agreed to try Actual Cautery, to which Mr. P. willingly assented, in spite of the prejudice of his countrymen against it. The ulcer was then deeply cauterized, and gave infinitely less pain to the patient than he expected. He readily assented, twelve days after, to have the operation renewed, on a part of the wound that was still rather hard and elevated. A deep slough succeeded the hard swelling, and the patient was cured, in the space of three weeks, of a disease that had resisted fifteen years' treatment of the best administered and well known remedies. The lip which till then was in a constant state of swelling, has now recovered its form and natural appearance. I judged it proper to establish an issue, that the constitution might not be impaired by the stoppage of a flowing, which, from having lasted so many years, had become natural to it.

Mr. M. D. returned to Geneva at the age of 45, having spent the best part of his life in Russia in every kind of dissipation. He was tormented with rheumatism that manifested itself with violence in the lumbar region. The pains obliged the patient to keep his bed. The spinal bone began to bend,

and formed an elevation at the lumbar region near the sacrum. His legs grew weaker from day to day, and at last became totally useless. Every kind of internal remedy was employed. I attended him for two years in conjunction with Doctors Vieussieux and Peschier. Nothing relieved him but asafœtida with osmunda regalis. During this time I had successively employed blisters, issues with potash, and moxas, to no effect. I at length applied burning irons to the lumbar region, so as to make about half a dozen sloughs, a few inches long, and half an inch wide. From that time the patient recovered, by degrees, the movement of his inferior extremities; then was enabled to walk with crutches, next with a cane, and lastly without any help at all.

On a sudden, a swelling appeared in the left fossa iliaca. A manifest fluctuation took place immediately after. The deposit remained in this state during several weeks, without giving much pain, or changing the colour of the skin. It went down at last, and gradually disappeared, to show itself again in the interior of the thigh, near the small trochanter, where it grew to the size of a fœtus at full term. I endeavoured to stop its descent by placing a compressing apparatus below the tumour, fearing the matter might be conveyed to the knee. I determined the patient not to have it opened, and experience gave weight to my opinion. The tumour diminished insensibly, and had totally disappeared in about two months, leaving in its stead a small hard lump deeply situated in the thick of the thigh under the little trochanter, stationary, and in no wise preventing the natural movement of the leg. The elevation of the vertebræ affected by the tumour, was the only trace it left, and from that time till his death, occasioned by a typhous fever in 1811, no symptom ever after appeared of the disease.

Examination of the Body.

Head.—Effusion of thick lymph of a greenish cast, that lifted up the arachnoïdes. Ossification, some lines in breadth, of the anterior extremity of the falx. The aorta dilated about a third, from the place of its origin to the part where it bends, deeply tinged with red in its interior.

Abdomen.—The viscera to all appearance healthy. The thigh near the little trochanter presents a tumour resembling a meliceris digitated, interposing itself between the muscles, and between some of their fibres also, enveloped by solid cellular tissue, strongly injected. The matter was conveyed as through a canal, under Poupart's arch, following the interior edge of the sartorius muscle; then spread itself like a cake over all the iliac fossa, till digitating anew between the psoas, it terminated in the diseased vertebræ, and filled those cavities that the caries had formed.

Not doubting but that four of the lumbar vertebræ were more or less diseased in their body, or their articular apophyses, I carried away that part of the rachitis in order to examine it in detail. The body of the fifth vertebra had retained its full size, but was filled with holes that were supplied by new osseous juices. The inferior cartilage was unimpaired; the superior one had altogether disappeared. The body of the fourth vertebra had lost two-thirds of its upper parts, was joined by its articular apophyses to the third vertebra, which was disfigured, and had lost its thickness. A portion of the osseous juice formed a point or thorn over the second, and extending to the fourth, became a solid fulcrum. An isolated portion of osseous matter floated at large in an excavation between the second and fourth vertebræ. It was worm-eaten, and in form a perfect sequestra. The inferior part of the second vertebra was corroded; it leant on the third and on the edge of the fourth, forming together a solid seam or suture. The body and cartilages of the first were in excellent condition. The lumbar vertebra formed an obtuse angle with the body of the third.

It appears evident that, during this long disease of the spine,*the caries of the vertebræ had been stopped in its progress; that the parts which the disease had separated, and rendered moveable, had acquired sufficient solidity and strength, in consequence of the flowing of the osseous juices; and that the medulla spinalis, ceasing to be compressed, had recovered its primitive energy.

About three years ago, on my road to the Glaciers of Chamouny, I was stopped at Salanches to see a middle-aged woman, who had a fungus hæmatodes, that entirely covered the back part of her shoulder. A pyriform tumour like a goose-egg, of a livid colour, adhered to the scapula, near the arm-pit, by a stalk. It was of a spongy nature, diminishing by compression. Independent of this pendulous tumour, the fungus spread like an irregular map over the scapula and upper part of the arm. Many places were ulcerated, and the ulcers opening about once a fortnight, caused hæmorrhage that was difficult to stop, and which had reduced the patient to extreme weakness.

The extraction of the fungus would have necessitated the amputation of the arm and shoulder. I conceived that the pain might be alleviated by the excision of the pyriform tumour, and the application of the actual cautery over the whole of the fungus. The patient consented to come to Geneva, and was put into the hands of Mr. Morin, a former pupil of mine; a consultation was held, which determined the trial of fire. After the excision of the tumour, the application of cautery was made so as to consume the fungus, by passing the burning irons rapidly over its surface, wherever it was perceptible to the eye. A wound to a considerable extent succeeded, which, on the falling of the sloughs, presented a granulated surface of a healthy appearance, though it never could be brought to complete cicatrisation. An evident tendency exists to renewal of fungus, which no sooner appears than it is destroyed as at first.

This patient is not completely cured, but she has been saved from inevitable death. The hæmorrhage has ceased. The pains have disappeared. She can make use of her arm. Her existence in short is completely changed from a state of misery to one of comfort.

It is well known that teeth have been preserved by burning carious portions, and the pains put a stop to.

The ozena of the maxillary sinus, with polypous vegetation, can hardly be effectually cured without fire.

I have twice cauterized with success, carious ischiatic tu-

berosity ; and in each case fire has determined the total separation of the tuberosity.

The most important precaution to observe in employing actual cautery is, to use the iron only when it is nearly white with heat, and to apply it instantaneously, so as to destroy the parts it touches, while it scarcely heats those around them.

The contrary is the case where moxa is applied, a more general and less local action is required, and the slow burning of the cotton perfectly fulfils this intention.

LITERARY AND SCIENTIFIC NOTICES, &c.

HENRY WILLIAM DUCACHET, M. D. of New York, has translated and published "*The Prognostics and Crises of Hippocrates*, with Critical and Explanatory Notes." This accurate and lucid translation, of what has been emphatically called, "a collection of the wisest and best aphorisms that ever were written by man," cannot fail being well received by the medical public.

ROBERT HARE, M. D. professor of chemistry in the university of Pennsylvania, has published in a pamphlet, "*A New Theory of Galvanism, supported by some Experiments and Observations made by means of the CALORIMOTER, a new Galvanic instrument.*" This instrument appears to us, to be nothing more than an extension of the elementary battery of Wollaston. "Twenty copper, and twenty zinc plates, about nineteen inches square, were supported vertically in a frame, the different metals alternating at one half inch distance from each other. All the plates of the same kind of metal were soldered to a common slip, so that each set of homogeneous plates formed one continuous metallic superficies. When the copper and zinc surfaces thus formed, are united by an intervening wire, and the whole immersed in an acid, or aceto-saline solution, in a vessel devoid of partitions, the wire becomes intensely ignited; and when hydrogen is liberated it usually takes fire, producing a very beautiful undulating or corruscating flame." By this arrangement, it becomes an apparatus of two plates only, which is the case in Wollaston's instrument.

The new theory advanced by the professor, is both ingenious and plausible. It alleges "that the principle extricated by the voltaic pile, is a compound of caloric and electricity; both being original and collateral products of galvanic action."

DR. J. MEASE has just published an Essay on the Sick Head-ach. There is a great deal of interesting information contained in this essay, concerning this very distressing and intractable malady.

WE are informed that DR. LYMAN SPALDING of New York, is preparing for the press, a translation of *Lordat's Traité des Hemorragies*; to which will be added, experiments and observations, in proof that hæmorrhage from the lungs is from exhalation, and not from the rupture of a blood vessel.

NATHANIEL POTTER, M. D. professor of the theory and practice of physic in the university of Maryland; proposes to republish with notes, the learned and excellent practical work of Dr. Armstrong, of London, on typhus fever. The masterly manner in which this important subject is treated, and the high estimation in which the work is held, both in Europe and America, eminently entitle it to a reputation as distinguished as any medical production, since the days of Dr. Sydenham.

Dr. P. waits the arrival of the last edition of Dr. Armstrong's work from London, previous to his edition going to press.

DR. ENNALLS MARTIN, of Baltimore, proposes to publish a Treatise on Intermittent and Remittent Fevers, a subject he had in contemplation several years before he removed to that city from the Eastern Shore; in which he will take occasion to make some observations on certain diseases incident to children, particularly that of cholera, and the method of treating them. To this treatise he will annex an essay published by him some years ago, on the *epidemic typhus of this country*. This disease he now hopes to have it in his power more satisfactorily to explain under its various modifications, and to make such alterations, corrections, and amendments, as may be deemed necessary and proper.

American Pharmacopœia.—The convention of the middle states for the formation of a National Pharmacopœia, met on the 1st instant, in the chamber of the College of Physicians of Philadelphia. During the session, the several articles of *Materia Medica*, and their preparations, were individually considered, and such selection made as was deemed most proper.

This convention closed its session on the 4th instant, by the appointment of the following delegates, to represent the middle district in the general convention, for the formation of a Pharmacopœia, and System of Medical Ethics, adapted to the United States, to be held in Washington, on the 1st of January, 1820.

Doctors *Samuel L. Mitchell, Alexander H. Stevens, Lyman Spalding, John Watts, Jr.,* of New York; *Thomas Parke, Thomas T. Hewson,* of Philadelphia; *Allen M. Lane,* of Wilmington, Del.; *Elisha De Butts, Samuel Baker,* of Baltimore; and *Henry Hunt,* of Washington, D. C.

It is hoped, that the practitioners of medicine residing in the middle states, who are acquainted with the virtues of the American plants, will communicate such information to some of the above named committee, in order that it may be incorporated in the great National Work, which now promises to be speedily completed.

The Trustees of the University of Pennsylvania, have elected Dr. PHILIP S. PHYSICK, Professor of Anatomy in that institution, in the place of Dr. DORSEY, deceased.

College of Physicians of Philadelphia.—At an annual election, held on the 6th inst. the following officers were chosen for the ensuing year:

President—Dr. Thomas Parke.

Vice President—Dr. Samuel P. Griffitts.

Censors—Dr. William Currie, Dr. Henry Neill, Dr. Thomas T. Hewson, Dr. Edwin A. Atlee.

Treasurer—Dr. Thomas C. James.

Secretary—Dr. John W. Moore.

OBITUARY.

DEATH has added to the severe losses sustained by Philadelphia, in the persons of Rush, Barton, Wistar, and Dorsey, by depriving us of Dr. Isaac Cathrall, on the 22d of February, 1819, in the 56th year of his age.

He was a native of Philadelphia, and studied medicine under the direction of the late Dr. John Redman, the preceptor of Rush and Wistar. After acquiring all the instruction in his profession, which the opportunities of our capital offered, aided by a diligent attention on his part, he visited Europe, and attended the practice of the London hospitals, and the lectures of the most distinguished professors in that city. He continued his studies at Edinburgh, and finally visited Paris. He then returned home in the beginning of the year 1793, and commenced practice in Philadelphia. He obtained a very respectable share of business, and was uniformly distinguished by regular attention to his patients, and the faithful performance of the duties imposed upon him by his profession. It may be safely said that he never lost a patient for want of either. During the prevalence of the widely destroying epidemic fevers of 1793, '97, '98, and '99, he remained in the city, instead of seeking safety by flying, and was a severe sufferer by the disease of the first of those years. Previously to his illness, and after his recovery, besides attending to practice, he lost no opportunity of investigating every phenomenon connected with that pestilential epidemic, which could in any way tend to illustrate its pathology, or the peculiarities it exhibited; and in the year 1794, he published his remarks thereon, and the mode of treatment he pursued. In conjunction with Dr. Physick, he dissected the bodies of some subjects of the fever of 1793, in order to discover the morbid effects produced by it on the system, and in particular reference to the nature of that singular, and generally fatal symptom, the dark coloured ejection from the stomach in some cases of the

disease. The result of their joint labours, was published by them, with their individual signatures, and he afterwards continued his dissections alone, with unabating zeal, whenever opportunity offered, during the subsequent epidemics, and occasional appearance of the disease, which more or less occurred for several years, until he obtained all the light which he thought dissection and experiment could throw upon its production and nature. In the year 1800, he read to the Amer. Philos. Soc., of which he had been elected a member, an interesting paper on that subject. This paper affords ample evidence of the patient and accurate manner in which he investigated that hitherto inexplicable and supposed pestilential *appearance*, and of his fearless zeal in the prosecution of medical science. It is inserted in the 5th vol. of the Transactions of the Society, and was also published in pamphlet form of 32 pages. A full account of it may be found in the 4th volume of the New York Medical Repository. Like the admirable papers of Godwin on the respiration of animals, Stevens on digestion, and the writings of the immortal Rush, it is pointed, concise, and sententious, and should be read by every member of the medical profession. It may well serve as a model for those who are engaged in experimental inquiries.

In the year 1802, he published a pamphlet in conjunction with Dr. Wm. Currie, on the epidemic pestilential fever that prevailed in that year in Philadelphia.

In the year 1806, he was elected one of the surgeons of the city Alms-House, and was continued by the successive managers of that institution until the year 1816; when, owing to an unfortunate difference in opinion with the gentlemen, who that year were in the direction, opposition was made to him, and he, with his surgical colleague was removed; only, however, by a majority of two in eight. But, although displaced, not the slightest imputation was ever made against them for neglect; on the contrary, a vote of thanks was passed by the managers, and presented to them for the faithful discharge of their duty, and the skill exhibited by them. The testimony was well deserved. But a compli-

ment even more grateful to a feeling mind was paid to them on this occasion ; and that was from the paupers in the house, who had personally experienced their skill, attention, and humanity. It is well known by those who have had the care of alms-houses and hospitals, that although the objects of public charity, the poor often exhibit the same temper, and require the same consideration and gratification of their wants, as private patients, who expect to remunerate their attendants for all their trouble and care ; and as nothing in the power of Dr. C. or his colleague was omitted or refused, that could in any way contribute to their comfort, the pensioners of the Alms-House warmly expressed their regret, when they were informed that their old friends had ceased to attend them.

In the year 1816, he was appointed by the governor of Pennsylvania, a member of the Board of Health of Philadelphia, but was continued only one year, as the board was re-organized, and new members chosen by the city councils, to whom the power was by law then given.

In that year he was suddenly seized, without any previous indisposition, with a paralytic affection of the muscles of his face, tongue, and lower extremities, from which he partially recovered by medical aid in a few weeks. He suffered two subsequent attacks, and his speech and mind became evidently affected. He frequently wandered in conversation, and exhibited symptoms of wrong association of ideas. At length on the night of the 22d February, 1819, a stroke of apoplexy, in the course of three hours, deprived him of life.

Dr. Cathrall was not only a most judicious physician, but an excellent anatomist and surgeon ; a close student, and sedulously bent on improvement in those branches of his profession, to which he more especially devoted himself. He paid great attention to morbid anatomy, and lost no opportunity which his public practice in the alms-house, or private patients afforded him, of making collections of such parts of the human structure, as had been the subject of disease. Of these he left a numerous and instructive collection of wet and dry preparations, and of bones, which, having suffered various accidents

or operations, evinced either the effects of disease, or the wonderful power of nature in the restoration of parts, or substitutions for those which had been destroyed. He also made several masterly preparations calculated to explain certain nice and important operations, which to a young surgeon must be sources of great instruction. Had his life been spared, it was his intention to publish a volume of interesting surgical cases he had met with, the rough materials for which he left; but it is mentioned with regret, and for the benefit of those who read this sketch, that they are written in so hasty a manner, as to be decyphered with difficulty. He is not the first medical or scientific man, whose useful labours have failed to do all the good they might have produced, in consequence of this unfortunate careless manner of writing. The celebrated Haller deemed an apology necessary in the preface to a learned work,* for the mistakes he made in quotations, arising from this fault. But the evils therefrom have been so fully pointed out in a volume† which it is taken for granted is in the office of every medical man, that no remark on the subject is here necessary.

Dr. Cathrall was educated in the religious principles of the Society of Friends, and naturally possessed a grave turn of mind, and a serious deportment. Retired in his habits, he was shy in making acquaintances, but firm in his friendships, and a well bred gentleman in his manners. In the important and endearing relations of a son, husband, and father, he was truly estimable. As a member of society, he set an example of rigid morality and inflexible integrity, attributes which every medical man ought to be proud to have annexed to his character, however distinguished his literary acquirements may be.

* *Bibliotheca Medicinæ Practicæ*, vol. iii.

† *Rush's 16 Introd. Lectures*, Philad. 1811, p. 171.

WE frequently indulge in extravagant grief on the death of aged and prominent men, at the close of a life of labour, service, and benefit. To confine our remarks, at the present, to our medical community: within a few years we have mourned the departure of several of the greatest American physicians, and most popular medical teachers. We have wept over the tombs of Rush, Barton, and Wistar; and in our mourning refused the consolations of hope: but, did we remember that few men run the course of life beyond threescore, we should have more reason to rejoice that we had so long with us this galaxy of genius and science, than to mourn for their loss. It was in the course of nature that they should go; and to us an immense indulgence of a beneficent providence, that they did tarry until years whitened their locks, experience and study had enabled them to enlarge the circle of science, and their professional success had secured to their memories lasting fame, and to their country an enviable renown.

In recurring to the distinguished services of the professors and physicians who have lived among us, to the honour of our society, the permanent and successful establishment of our medical university, and the glory of the profession, we confess we have other feelings than those of grief; and repine not at the allotments which translated them to another and a better world. Grateful for what they have done, both for us and our country, we have never ceased to cultivate a spirit of resignation. But how different have been our feelings, in contemplating two more recent bereavements of our medical circle!

In the death of the lamented Dorsey, our university sustained, not a catastrophe, but a privation which, like a cloud, has ever since overshadowed its prospects. This calamity we have mourned, because Dorsey was young and yet full of promise. Our pages bear testimony of our respect for his memory, and our most sincere grief for his very unexpected departure, especially from that theatre on which he was destined to act so usefully and honourably. Scarcely for this privation had our tears ceased to flow, and long before we had reached

the philosophy of resignation, came upon us another mournful calamity—a calamity calculated indeed to visit the heart with deep melancholy—a calamity marked by many features of woe—a calamity sporting with parental care, social hopes, and the fair earnest of youthful genius—the death of Dr. James Philips Freeman.

This young gentleman, born in 1796, was designed by his father for the church; having the assurance of an eligible place in England. His academical education was directed by the Rev. Dr. Abercrombie of this city, from whom, on leaving the academy in 1809, he received flattering testimonials of his diligence and success. He then entered the University of Pennsylvania, where he pursued his collegiate course with more than common success, until the commencement in 1816, when he received the degree of Bachelor of Arts; holding, in the judgment of the faculty, a high standing in his class.

Having completed the studies preliminary to the selection of a profession, he was called on to make a decision to him the most important—whether passively to acquiesce in the predilection of his father, or, remaining in the United States, to devote himself to the profession and practice of medicine. In the first case, he was necessarily led to the anticipation of quitting father, mother, brother, sister, and the friends of his youth, and also the scenes of his education thus far completed; in the second, of abiding with the objects of his amiable affection, and, availing himself of the great facilities at hand, of making himself an accomplished physician. On the latter he finally resolved. Placing himself under the direction of professor Chapman, he commenced the study of medicine, to which he devoted himself with that earnestness and assiduity which brought him favourably to the notice of the medical community; attending, in the mean while, the lectures of the university. The facilities of improvement in his profession were enlarged by an invitation, in 1817, to become an assistant at the alms-house, in the place of a gentleman whose absence became necessary from indisposition; and in 1818 he was unanimously elected a resident student of that institution for the

term of one year. Completing his medical course, with great honour, he received, at the commencement of 1819, the degree of Doctor of Medicine; but, melancholy to add, a few days afterwards, 30th April, 1819, was carried off by a malignant fever. Thus death arrested the hopes of his friends and relations, and removed from life a gentleman, who gave the fairest promise of usefulness to the public, and honour to his country. Here indeed there is occasion to mourn; for, the fruit of a flourishing and hopeful youth has been withered in the blossom. His parents and relations have lost an object endeared to their circle; but the community have lost one who promised to be its benefactor.

Died in Warrenten (N. C.) on the 8th instant, after a long and severe illness, and at an advanced age, Dr. JAMES G. BREHON, who for near 40 years had been a resident of that state, the greater part of which he lived in that place. Dr. Brehon was a native of Ireland, but came to this country previous to the revolutionary war; during that eventful period, he was a surgeon in our then infant navy. He was a patriot of sterling principles. Fond of scientific research, and possessed of great literary taste, he read much, and his conversation was replete with information. Eminently skilful as a physician and surgeon, Dr. Brehon was for many years devoted wholly to his professional duties. As old age advanced and health decayed, he declined general practice, visiting only a few old friends who had long looked up to him when disease assailed them. Amongst his favourite pursuits, Botany and Horticulture held a distinguished place—the latter he practically cultivated to some extent. Whilst health permitted, Dr. Brehon's house was the seat of hospitality, and when he could no longer enjoy mixed company, the voluntary visits of his friends lighted up his countenance, and awakened his admirable colloquial powers. Dr. Brehon had been many years a widower, and died wealthy and without issue.

MISCELLANEOUS.

AT a Convention of the Medical and Chirurgical Faculty of Maryland, on the 7th June, the following Officers were elected for the ensuing year :

ENNALLS MARTIN, M. D. President.

T. P. HALL, M. D. Corresponding Secretary.

W. FISHER, M. D. Recording Secretary.

W. W. HANDY, M. D. Treasurer.

Board of Examiners for the Western Shore.

Drs. E. De Butts, W. Gibson, M. M'Dowell, W. W. Handy, S. K. Jennings, J. D. Readell, and P. Macauley.

Board of Examiners for the Eastern Shore.

Drs. Goldsborough, H. H. Irving, Thomas, Reese, and Morgan Brown.

CENSORS.

Harford—Drs. W. Bryarly, Richard Allen

Cecil—James Scanlan, Robert Archer

Kent—Morgan Brown, Page, Scott

Chestertown—James Anderson, Jr.

Somerset—John King, M. Jones

Dorchester—W. Jackson, P. Dixon

St. Mary's—J. Gwinn, Jos. Stone

Charles—R. I. Crane, W. Weems

Prince George's—S. Franklin, B. Semmes

Calvert—Jos. Ireland, J. C. Dare

A. Arundel—W. Denny, M. Fenwick

Annapolis—John Ridgely, Dennis Claude

Frederick—J. Mackelfresh, Ld. Smith

Frederick-town—W. B. Tyler, Jacob Baer

Washington co.—J. I. Hayes, John Ridout

Hagerstown—Frederick Dorsey

Montgomery—O. Wilson, Z. Magruder.

The districts of Baltimore, Alleghany and Worcester, and the sixth Medical District, consisting of Talbot, Queen Anne's and Caroline counties, having formed Medical Societies, each member of these becomes a censor ex officio.

Dr. P. K. ROGERS was elected Orator for the next year.

According to a Resolution of the Faculty passed in 1805, Dentists and Oculists are prohibited practising in their respective professions, until they shall have obtained licenses from the Board of Examiners.

By order,

W. FISHER, Rec. Sec'y.

METEOROLOGICAL.

J. J. Astor, Esq. has kindly permitted an examination of a journal kept at *Astoria*, at the mouth of the *Columbia River*, by an officer of his ship, the *Beaver*. It is regretted that a thermometer was not employed. From an examination of the journal, from March, 1811, to March, 1812, the following results have been formed, which afford a tolerable idea of the Meteorology of that position.

| | | |
|-------------------------|-----------|-----|
| Cloudy | - - - - - | 116 |
| Rain | - - - - - | 122 |
| Clear | - - - - - | 164 |
| Fresh gales and squally | - | 18 |
| Snow | - - - - - | 4 |
| Hail | - - - - - | 5 |
| Thunder and lightning | - | 3 |
| Frost, hail, ice | - - - | 8 |

The winds were principally from the W. and S. W. In May, 1811, they planted a garden with a variety of seeds, and sowed clover, timothy, and other grass seeds. A turnip taken from the garden December 20, weighed 15½ pounds, and was

33 inches in circumference. Radishes succeeded well. The officers and seamen kept the 4th of July in a proper manner. They had salmon through the summer, chiefly furnished by the Indians, who were, in general, friendly. Some of the salmon weighed 45 lbs. each. Astoria is in latitude $45^{\circ} 15'$. Its mild temperature depends on the general winds passing over a large extent of ocean. In the middle latitudes in both hemispheres, the prevalent winds are from the western semicircle, and the western shores of the two continents are warmer than the eastern. Liverpool, in latitude 53° is warmer than Boston in latitude 42° .

Z.

DISTRIBUTION OF CALORIC.—April, 1819.

Montreal.—Lat. $45^{\circ} 38'$, long. $3^{\circ} 26'$, East of the Capitol.

Chilicothe, (Ohio.)—lat. $39^{\circ} 18'$, long. $5^{\circ} 55'$, W. do.

| | | | | | |
|------------------------------------|---|---|---|----|----|
| Montreal.—Mean temperature, April, | - | - | - | 44 | 00 |
| Highest, | - | - | - | 67 | 00 |
| Lowest, | - | - | - | 31 | 00 |
| Chilicothe.—Mean temperature, | - | - | - | 57 | 23 |
| Highest, | - | - | - | 78 | 00 |
| Lowest, | - | - | - | 30 | 00 |

April 22—the river St. Lawrence was fast bound with ice at Quebec.

The limit of organized life on our globe is very small, compared with the magnitude of the planet. The line of *perpetual congelation* is a *curve* of peculiar character: at the equator, its height above the level of the ocean is nearly *three* miles—in the lat. 45° , it is less than a *mile and a half*. Its height diminishes as the latitude increases, and at the equinoctial periods it vanishes before it reaches either pole. The points of the contact of this curve advance to or recede from the poles, as the sun declines north or south of the equator; therefore, a very small portion only of the globe is within the region of

perpetual frost. The whole of the arctic and antarctic regions enjoy the influence of a portion of caloric once a year. The summits of *Chimborazo*, *Popocatepetl*, *Mount Blanc*, the *Himalah* mountains of *Thibet*, &c. &c. are alone condemned, by the present constitution of the globe, to *perpetual* frost and sterility.

The *inferior* limit of organized life is very small, in comparison with the *superior*. Virgil, in describing the *oak*, says "*quantum vertice ad auras—tantam radice ad Tartara tendit*;" but Virgil belonged to a privileged order—he was a *Poet*, and not *quo ad hoc*, a philosopher. The number and the variety of organized living beings increase as we approach the equator. Much valuable information of the meteorology of our country may be obtained by proper exertions. It is not *merely* a subject of curiosity—it is highly useful. The scientific expedition to the west, under Major Long, is honourable to our government and country. The Registers of Land Offices, and several other respectable gentlemen, have communicated to the writer valuable information on the meteorology of the United States and territories, and he wishes the continuance and the increase of such communications.

JOSIAH MEIGS.

General Land Office, May 13, 1819.

FROM THE NATIONAL INTELLIGENCER.

DISTRIBUTION OF CALORIC FOR THE MONTH OF APRIL, 1819.

| | | North W. of Capitol. | Mean for the month. | High-est. | Low-est. |
|------------------|-------|----------------------|---------------------|-----------|----------|
| Zanesville, lat. | 39 59 | long. 4 58 | 55 67 | 83 | 24 |
| Marietta, | 39 30 | 4 28 | 54 33 | 89 | 28 |
| Chilicothe, | 39 18 | 5 54 | 57 26 | 82 | 30 |
| Cincinnati, | 39 06 | 7 31 | 56 98 | 89 | 28 |
| Jeffersonville, | 38 03 | 8 34 | 57 77 | 78 | 28 |
| Huntsville, | 34 36 | 9 55 | 62 67 | 81 | 32 |
| Savannah, | 32 08 | 4 14 | 64 07 | 89 | 34 |
| Ouachita, | 31 50 | 15 10 | 72 33 | 87 | 48 |

VOL. II.—3 P

It is worth notice, that the coldest day in each of the eight positions, was the same day—the 1st of April—in a space of about eleven degrees of longitude and more than eight of latitude.

At *Zanesville*, the martin and common swallow first appeared on the 10th ; the peach and apricot were in bloom on the 16th—the apple on the 27th.

At *Marietta*, the presence of martins, and the bloom, were three or four days earlier, and about the same at *Cincinnati*.

At *Ouachita*, every forest tree was green on the 15th of the month. No birds of passage seen there during the month, except a few of the large cranes, (*grus Americana*, of Brisson.) *Sugar cane* in the gardens *twelve* inches high—the growth of only 16 days from the time of sprouting. On the 30th, the river (*Ouachita*) was rising rapidly, and about as high as on the same day in 1818, viz. thirty-two feet above low water mark.

The geographic positions of the places above mentioned, (*Savannah* excepted,) are founded chiefly on the surveys of the public lands of the United States ; a system of peculiar beauty and utility. On this system, remarks will be made hereafter.

J. M.

General Land Office, June 15, 1819.

UNIVERSITY OF THE STATE OF NEW YORK.

College of Physicians and Surgeons.

CIRCULAR.

City of New York, May, 15th, 1819.

1. THE Lectures in this College begin, annually, on the first Monday in November, and end on the last day of February.

2. The Student shall matriculate every session, by entering his name with the Dean, to be enrolled by him ; but shall pay no matriculation fee after the first, and this will include the use of the Library for that term.

3. The candidate for a degree must be twenty-one years of age, and have attended, at least, one complete course of all the lectures delivered during the winter session in the College.

4. The first examination of the candidate is held by the President and Professors only : It is private and confidential. The second examination is held before all the Trustees, on the 15th of March, unless it fall on Sunday, and then it will be held on the day following.

5. On or before the 20th of March, the candidate shall deliver to the Dean a Dissertation on some subject connected with Medicine, or Surgery, written in the Latin, English, French, or Spanish languages ; and the candidate may print his Dissertation, with the approbation of one of the Professors.

6. The third examination of the candidate is concerning his Dissertation, and is held the first Monday in April, in the College Hall, with open doors.

7. The commencement takes place invariably the day following.

8. The graduation fees do not exceed thirty dollars.

9. All the Anatomical class are permitted to have access to the dissecting room free of expense.

10. Every Student of Chemistry may view the operations of the laboratory free of expense.

11. The fee for matriculation is five dollars.

12. The fee for the use of the Library is two dollars, except as provided in the second article.

13. The fees of the Professors are as follow :

| | |
|--|---------|
| Theory and Practice of Physic, and Obstetrics and the Diseases of Women and Children, by DAVID HOSACK, M. D. | \$15 00 |
| Chemistry and Materia Medica, by WILLIAM JAMES MACNEVEN, M. D. | 20 00 |
| Anatomy, Physiology, and Surgery, by WRIGHT POST, M. D. | 20 00 |
| Natural History, including Botany, Zoology, and Geology, by SAMUEL L. MITCHELL, M. D. | 15 00 |
| Principles and Practice of Surgery, by VALENTINE MOTT, M. D. | 15 00 |
| Clinical Practice of Medicine, by WILLIAM HAMERSLY, M. D. | 15 00 |
| Institutes of Medicine, and Forensic Medicine, by JOHN W. FRANCIS, M. D. | 10 00 |
| Mineralogy, by BENJAMIN DE WITT, M. D. | 15 00 |

The Professors, whose courses require specimens, apparatus, and preparations, are amply provided with every thing requisite for the illustration of their lectures.

The Anatomical Museum contains an extensive collection of preparations, of the greatest variety and importance.

The Chemical apparatus is copious and well chosen, and admits of exhibiting all the demonstrations of Chemistry, in its most improved state.

The Cabinet of Natural History, contains specimens in great abundance and variety, from all quarters, to illustrate the Botanical, Zoological, and Geological, course of instruction.

The Cabinet of Mineralogy belonging to the late Professor Bruce, has been procured for the use of the College, by the present Professor of Mineralogy, and is arranged in the College Hall. It is well known to be extensive and valuable.

Lastly, this College enjoys the peculiar advantage of being able to obtain subjects from the State Prison, under the sanction of an act of the Legislature.

By order,

SAMUEL BARD, M. D. President.

JOHN W. FRANCIS, M. D. Registrar.